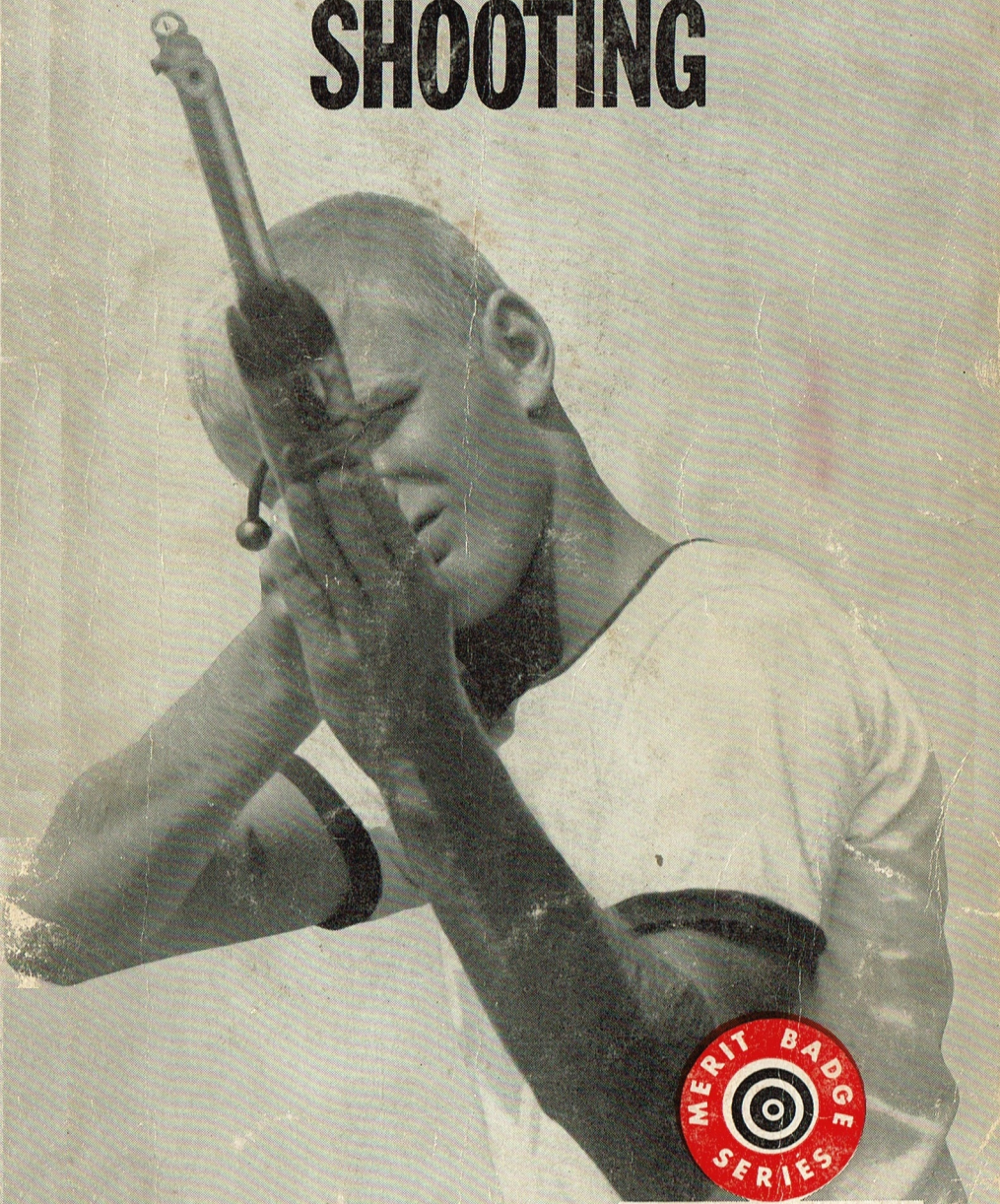
RIFLE AND SHOTGUN SHOOTING



MERIT BADGE SERIES

BOY SCOUTS OF AMERICA

Rifle and Shotgun Shooting

BOY SCOUTS OF AMERICA • NEW BRUNSWICK, NEW JERSEY

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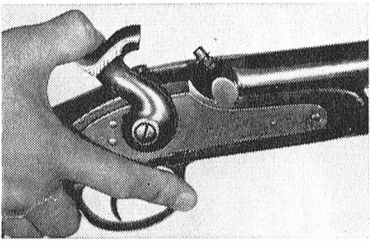

Requirements

1. Principles of Firearms Safety and Conservation

a. Explain the meaning of each item in the Shooter's Safety Code; agree to live up to the code.

b. Write two hundred words on "My Responsibilities as a Shooter."

c. Explain the general features of the laws governing the use and possession of firearms in your community.

d. Explain how guns are related to wildlife conservation.

e. Explain the general features of the hunting regulations in your State, including the types of game which may be hunted and any special regulations on the use of firearms.

f. Explain the conduct of a good sportsman when handling firearms.

2. The Rifle, the Shotgun and Their Use

a. Describe two principal technical differences between the rifle and the shotgun; explain how these differences affect their use in the field.

b. Draw and explain a diagram showing proper sight alignment and a proper sight picture with the rifle; explain how the aiming process differs with the shotgun.

c. Explain the principles of good rifle shooting positions; demonstrate three positions; explain and demonstrate the differences between a good rifle shooting position and a good shotgun shooting position.

d. Explain and demonstrate the

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No. 3311 Printed in U.S.A. 50M467
Library of Congress Catalog Card Number: 19-600

proper use of the trigger in rifle shooting; explain and demonstrate the proper use of the trigger in shotgun shooting.

e. Explain and demonstrate shotgun swing; explain why "follow-through" is so important.

3. Safe Gun Handling

a. Explain the general principles of safe handling of guns and ammunition.

b. Explain the safety precautions for guns having fixed or detachable magazines and the special precautions necessary for tubular magazines.

c. Demonstrate how to check for safety at least three of the following; explain how to check the others.

(1) Rifle or shotgun
  (a) Semiautomatic action
  (b) Pump action
  (c) Break-open or hinge action
  (d) Bolt action
  (e) Lever action
(2) Handguns
  (a) Semiautomatic
  (b) Revolver
(3) Muzzle-loader of any type
(4) Gas, pneumatic, or air gun

d. Demonstrate in the field:

(1) Safe carrying of a gun when alone or with other hunters.

(2) Proper relationship of hunters when loading and unloading guns.

(3) Safe handling of a gun when taking it out of and putting it in a car.

(4) Safe gun handling when crossing a fence.

e. Explain what is meant by "safe zone of fire."

f. Explain the principles of safe storage of guns and ammunition at home.

g. Explain what you would do if a friend visiting your home asked to see your target rifle.

h. Explain the care and maintenance necessary to keep a firearm in good and safe working condition.

4. Shooting Skills

Demonstrate your ability to apply the principles of shooting by meeting the standards shown below in either

"Option A—Rifle Shooting"
or
"Option B—Shotgun Shooting"

OPTION A—Rifle Shooting

a. Score required: Make a total score of at least 380 points out of a possible 600 on a total of 12 targets, including:

(1) Four targets from the prone position, each scoring at least 35 points out of a possible 50.

(2) Four targets from the kneeling position, each scoring at least 25 points out of a possible 50.

(3) Four targets from the standing position, each scoring at least 20 points out of a possible 50.

Note that *it will be necessary to make more than the minimum score on some targets in order* to make the required total of 380 points.

b. Specifications: Qualification may be fired on any one of the following courses of fire:

(1) The 50-Foot Course: Fired with the .22-caliber rimfire rifle us-

ing the .22 short, long, or long-rifle cartridge; 50-foot range using 50-foot A1, A2, A4, A5, A16, or A17 targets.

(2) The 25-Foot Course: Shot with any air gun or gas gun having a rifled barrel; 25-foot range using 25-foot A18 or A19 targets.

(3) The 15-Foot Course: Shot with any smoothbore air or gas gun using BB's; 15-foot range using 15-foot A45 or A46 targets.

Range distance: Measured from firing line to face of target.

Number of shots: Five shots per target.

Sights: Any not containing glass.

Targets: Official BSA, Official NRA, or those issued by the director of Civilian Marksmanship.

Sling: The sling may be used only in connection with the arm and hand supporting the fore-end.

OPTION B — Shotgun Shooting

a. Score required: Break at least 13 clay birds out of a possible 25 in each of five separate 25-bird events.

b. Specifications:

(1) The .22-Caliber Shotgun Course: Fired with a .22-caliber smoothbore gun, using .22-caliber rimfire shot cartridges; targets of the Mo-Skeet-O type, approximately 2 inches in diameter; targets may be thrown from a handtrap or standard spring-operated trap.

(2) The Large Caliber Shotgun Course: Fired with a standard shotgun of .410 gauge or larger; targets of the standard type, approximately 4½ inches in diameter; targets may be thrown from a handtrap or standard spring-operated trap. Standard skeet or trap courses may be used.

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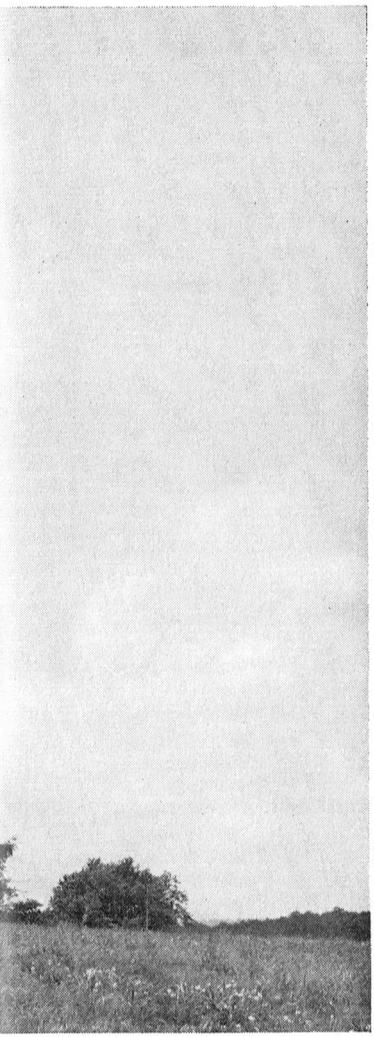
THE SHOOTER'S SAFETY CODE

A Scout:
Always follows the rules for firearms safety.
Accepts the responsibility going with the use and possession of firearms.
Follows the laws governing the use and possession of firearms in his community.
Practices wildlife conservation.
Follows the spirit and letter of the game laws.
Is especially careful to be a true sportsman when using firearms.



Firearms Safety and Conservation

1a Explain the meaning of each item in the Shooter's Safety Code; agree to live up to the code.

The Shooter's Safety Code is not a mere list of safety precautions, important as safety is to all of us. As you will see later, we will cover safety in nearly all the other requirements. Instead of just covering safety, the code lists a set of basic principles which are necessary for you to know and to follow when you start handling guns. These principles apply whether you are a hunter or a target shooter, whether you own a gun or borrow one, whether you are a serious, devoted shooter or just a casual tin-can shooter. Although the code includes matters other

than safety, we have used the name "Shooter's Safety Code" to remind you first, last, and always of safety with firearms. If you follow the code you will handle guns safely. More than that, however, if you follow the code, all its principles will combine to make you a knowledgeable and expert gun user—and help to make you a good citizen.

Responsibilities

1b Write two hundred words on "My Responsibilities as a Shooter."

Carelessly used, a gun can be very dangerous. Every time you pick up a gun, you pick up the responsibility for using that gun safely, both to protect yourself and to protect the people around you and the community in general. If you are a gun owner, you accept the responsibility of keeping the gun and its ammunition under careful control so that untrained people cannot get at them. You accept the responsibility of teaching those in your home whatever is necessary to keep them from hurting themselves or others with your gun.

When you are shooting on the range, you accept the responsibility of complying with all the range rules, especially those dealing with safety. Whether you are shooting or not, you watch carefully to see that others follow the principles of safety.

When you are hunting or shooting in the field, you accept the responsibility of following the regulations concerning the use of guns, as well as the responsibility of knowing and following the game laws. As a true sportsman, you accept the responsibility of knowing where your bullet will stop and of shooting only at proper targets. You accept the responsibility of cooperating with the landowner.

These responsibilities are covered in more detail in the discussions on the various requirements. Don't think the responsibilities we have listed in this paragraph or even those in the remainder of this pamphlet are all; you may well recognize other responsibilities which go with the possession and use of a gun.

Knowing the Laws

1c Explain the general features of the laws governing the use and possession of firearms in your community.

At one time in this country, practically anyone could own, carry, and use a gun. In fact, it often was a necessary item for personal protection against wild animals or against lawless men.

With the development of law and order, the necessity for carrying a gun all the time was reduced. Because guns have been used hastily in moments of anger or handled by people without proper knowledge of their use, most communities have found it necessary to limit the normal carrying of a concealed weapon to those who have a real need.

As communities developed and the land became more populated, it no longer was safe to step outside the front door and shoot a gun in any direction without looking. Therefore, most areas have found it necessary to put restrictions on how and where you can shoot a gun.

Some types of people have shown that they cannot satisfactorily accept the responsibilities that go with ownership and use of a gun, and many communities have passed laws forbidding gun ownership by narcotics addicts, exconvicts, and others.

The laws governing the ownership and use of guns may be made at Federal, State, county, or city level. Your local law-enforcement officer should be able to give you advice on this subject. Your merit badge counselor can also help you.

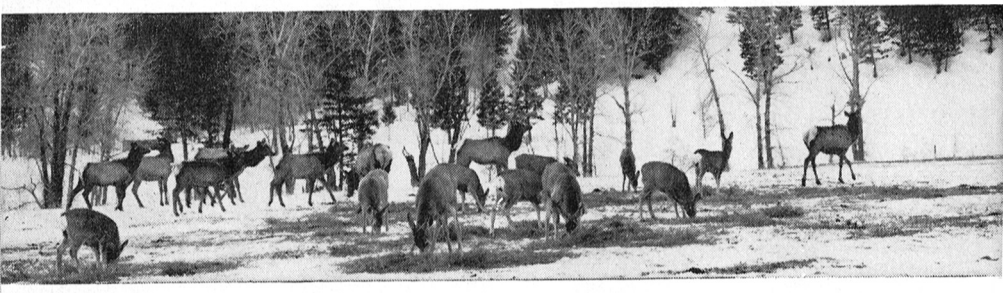
There are also restrictions on guns and their use in connection with hunting, but we will cover these in a later requirement.

Wildlife Conservation

1d Explain how guns are related to wildlife conservation.

Wildlife biologists have long recognized two major factors in game management. The first is that you cannot stockpile wildlife.

With some exceptions, a given piece of ground can support only a given number of one type of wildlife. If you decide that you would like to have more game of a certain kind in that area and you stock it heavily with extra animals, what will happen? If you go back in a year or so, you won't find any increase in the number of animals. Starvation, disease, or predatory animals will have taken the extra ones.



The second factor of importance is that nature overproduces every year – produces far more animals than the area can support. And as we saw above, the excess is lost—nature's way of making sure that there are enough animals each year for breeding and for ensuring that only the strongest strains survive for reproduction. Starting with 100 pheasant eggs in June, there will be 50 chicks by the first of August, 25 grown birds by the first of October, but less than 10 birds left by next May. Only about 8 percent of young rabbits grow to breeding age.

These principles apply generally, almost regardless of what you do to the animals. If you put extra animals in the area, they will die. If you kill or trap extra animals, the remaining stock will soon bring the population up to the normal figure. Since it doesn't seem to matter to nature how the surplus animals are killed, game management experts try to arrange the hunting seasons and the bag limits so that this surplus can be harvested by hunters. Far better that the hunter should get the healthful outdoor recreation—and the meat

—harvesting the surplus than to lose it to disease, starvation, and predatory animals.

Occasionally a group of animals will apparently violate the principles we have been discussing. For a few years, there will be a larger carry-over than the land can support properly.

When it is obvious that the carry-over is too large, it is most important to increase the harvest to get the herd down to a safe size for the land. Game managers will often increase the length of the hunting season and increase the bag limit.

The gun thus plays a definite part in conservation. It harvests much game that would otherwise be lost to natural causes. It can help nature bring an overlarge herd down to a safe size. With few exceptions, hunting alone has relatively little effect on overall game population. Whether hunting is allowed or not, whether seasons are long or short, whether females are to be taken or not; the game population remains about the same on the average.

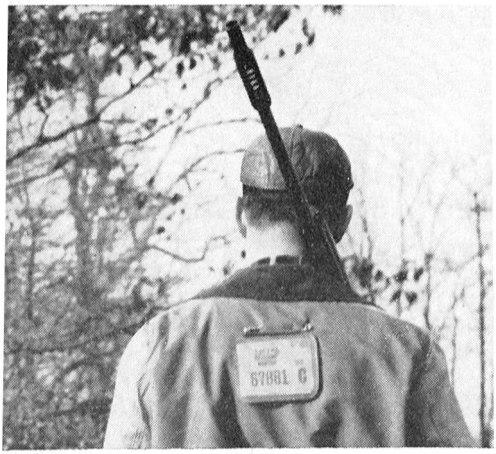
The real problem for game animals is what man has done and is doing to the habitat in which these animals live. Replacing woods, fields, and marshes with subdivisions, shopping centers, superhighways, industrial complexes or airports, leads to reduced numbers of game animals. Pollution of soil, water, and air and the careless use of some chemicals is also harmful to wildlife.

Hunting Regulations

1e Explain the general features of the hunting regulations in your State, including the types of game which may be hunted and any special regulations on the use of firearms.

Each State has its own hunting regulations. They are usually issued by the State fish and game department, conservation department, or the similar organization which controls hunting and fishing. You can obtain copies of the regulations by writing the correct department at your State capital. You usually can obtain the regulations by visiting the local sporting-goods store or hardware store where hunting licenses are sold. Your merit badge counselor can help you.

Federal regulations cover migratory birds such as ducks, and



you need a federal duck stamp to hunt them.

There are many differences in the State game laws, due to differences in geography, population, history, and game types. Even within the bounds of a single State, you may find that certain areas or counties may have different regulations, again varying because of local conditions.

The term "big game" usually includes deer, bear, antelope, elk, and moose; but, of course, all States don't have all those animals. Small game usually includes rabbits, raccoons, opossums, squirrels, and the like. Game birds include quail, doves, ducks, grouse, turkeys, prairie chickens, pheasants, etc.

Some types of wildlife are considered undesirable, and there are no regulations on hunting them in many states. Included are such creatures as the crow, the fox, the ground squirrel, and the groundhog or woodchuck.

While most game birds and animals do not travel far from where they were born, ducks, geese, doves, and a few other species travel hundreds or thousands of miles. Consequently, State regulations are rather ineffective in controlling the harvest of this game. In fact, it is not possible to control it even within the United States, the birds travel so far. Therefore, Mexico, the United States, and Canada are cooperating to control the hunting of these migratory game birds.

As we discussed earlier, game is a crop which may be harvested each year. Game regulations are designed to harvest as much of the crop as possible without seriously effecting the harvest in the following years. The game regulations, consequently, will vary from time to time as drought, food, animal birth rate, and other factors affect the game.

Many States have regulations regarding the use or carrying of guns when hunting. These regulations are designed to protect you and others in the neighborhood. Such laws might prohibit carrying a loaded gun in a car or shooting from a car or near a building. Many States attempt to make the most of the game crop and to reduce needless wounding of big game by forbid-

ding the use of certain weak cartridges. These relatively ineffective cartridges may be singled out by name, by bullet weight, by striking energy, or by size. Pistols and revolvers of any kind or size are often prohibited for hunting big game.

Generally, all States require hunters to carry a license. Licensing is used to control the game harvest and to provide funds for further development and game management. To get a hunting license for the first time, in many States it is necessary for the prospective hunter to complete successfully the "Hunter Safety Course" developed by the National Rifle Association and given by NRA volunteer instructors. Even if your State does not require this, it is certainly worth your time to take it before you start hunting. You will find it interesting and if you have earned this Rifle and Shotgun Shooting merit badge, you won't find it too difficult.

The Good Sportsman

If Explain the conduct of a good sportsman when handling firearms.

The true sportsman follows one basic principle: Be considerate of others and treat them as you wish them to treat you.

This means that:

First, the sportsman knows and always follows the rules for safe gun handling at home, on the range, and in the field. The sportsman knows and strictly follows the laws regarding possession and use of firearms. The sportsman knows and strictly follows the rules and regulations of competitive shooting. The sportsman knows and strictly follows the letter and spirit of the hunting regulations.

The sportsman is considerate of the landowner whose property he may be using. He asks permission to hunt on the property. He leaves gates as he finds them. He is careful not to damage fences or other property. He does not litter the area with trash.

The sportsman gets the most pleasure out of the hunting, seeing and getting within range of the game, rather than the actual taking of the game.

The sportsman is careful of his target, not only for safety but to avoid wanton destruction. He does not shoot powerline insulators, pipeline valves, signs, and similar property. He confines his shots to proper targets.

The sportsman is careful of the area beyond his target to ensure that the bullets that miss the target or ricochet don't travel on to cause damage.

The sportsman, when hunting in the field, gives the other fellow the first chance at game.

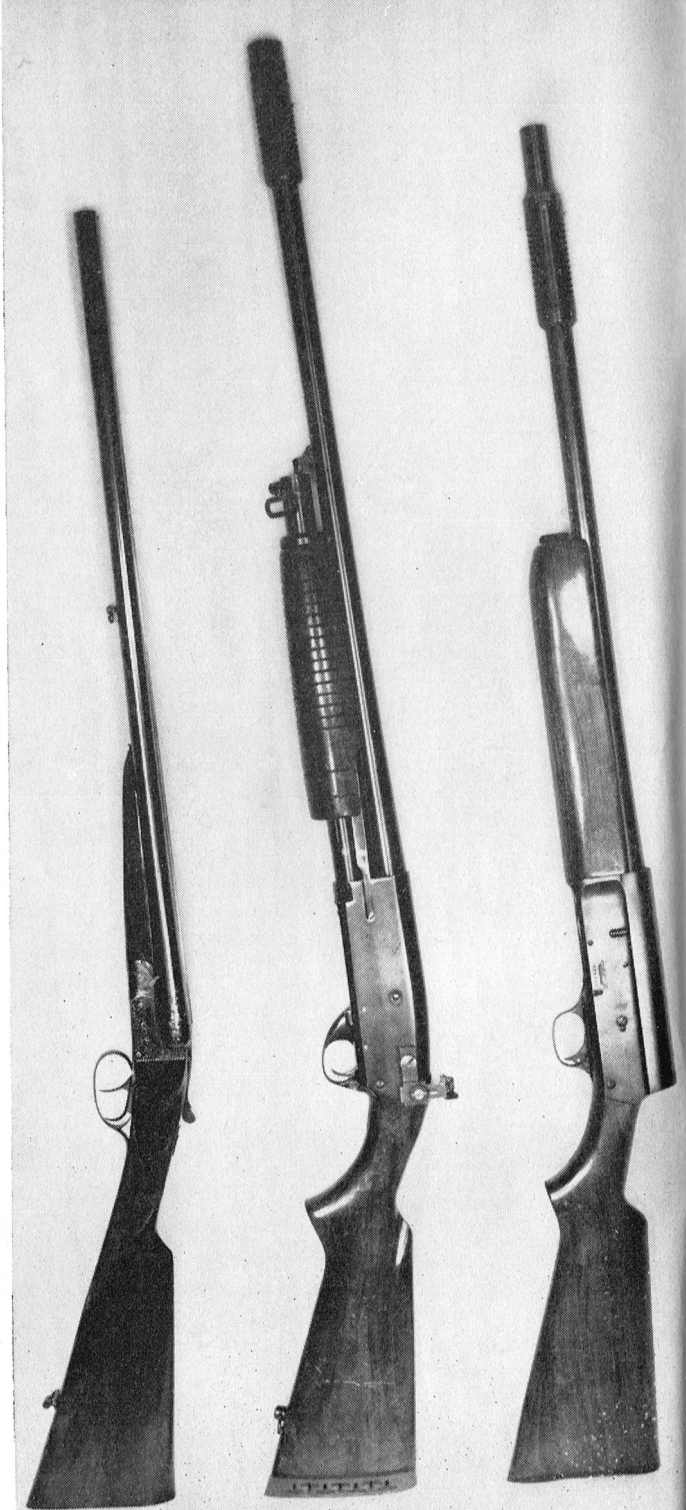
The sportsman does not take unfair advantage of another shooter in any way.

Use of the Rifle and Shotgun

2a Describe two principal technical differences between the rifle and the shotgun; explain how these differences affect their use in the field.

Three different kinds of high-power rifles: at left, a carbine-type bolt action; next, the Army's M1 military rifle; at right, a bolt action match rifle, designed for target shooting.

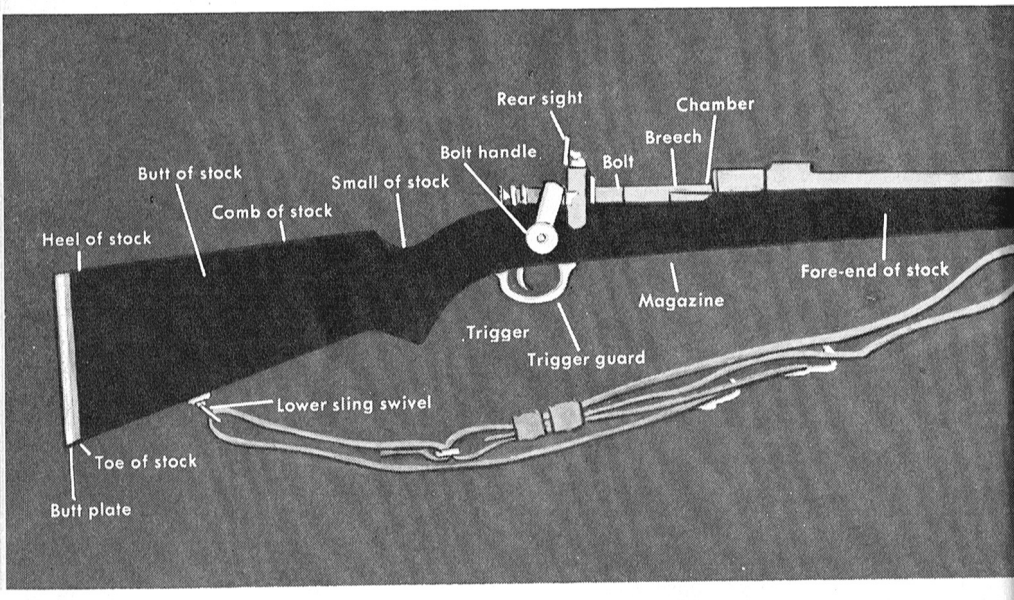
Four different kinds of rifles are shown on page 15: from left, a bolt action hunting rifle; a .22-caliber slide-action plinking gun, a lever action high-power rifle and an autoloading high-power rifle.

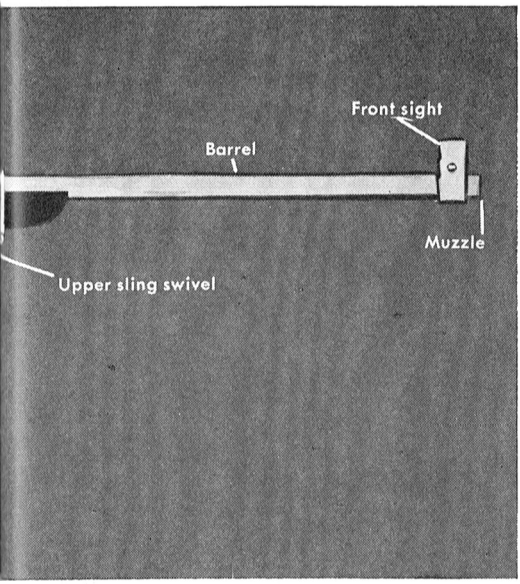


Three types of shotguns: the double-barreled, the pump, and the autoloader. The two on the right have muzzle devices for controlling choke and recoil.

On the left, a single-barreled shotgun, specially designed for trapshooting; a fine double-barreled gun, useful for all kinds of shooting; and a .410 gauge under - and - over double-barreled gun.

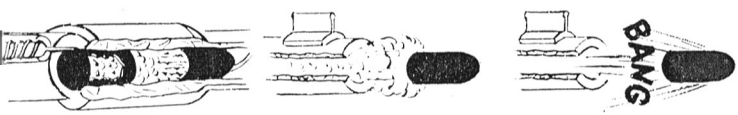
Spiraling gives the bullet stability in flight, like a top, plus greater accuracy and range.

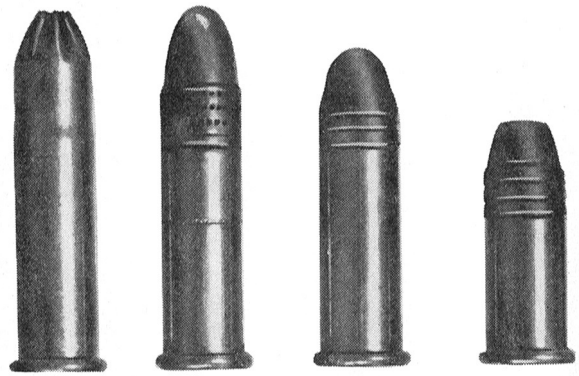




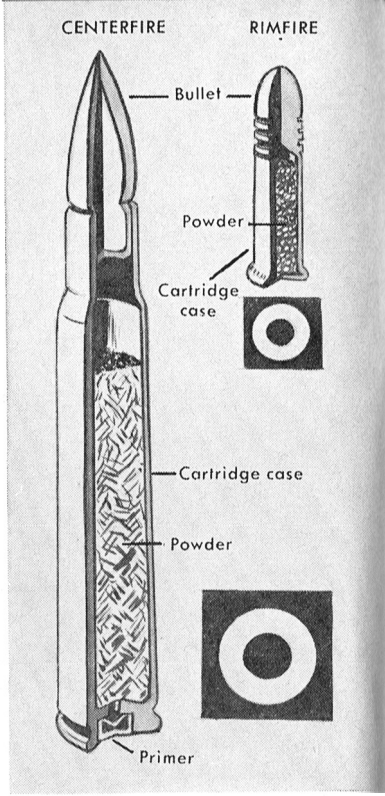
The rifle is a precise instrument, designed for precision work. It is designed to hit almost exactly where you want to hit.

The rifle shoots a single projectile, which is both effective and accurate at long range. As this single projectile or bullet is forced through the barrel, it engages the rifling on the inside of the barrel. The rifling is like the thread on the inside of a nut, but stretched out. The rifling forces the bullet to spin, and when it leaves the muzzle, it is spinning rapidly like a well-thrown football. Like the football, the bullet flies nose first and straight, due to the spin and velocity.





The .22 shot cartridge, on the left, is about the same size as the .22 long rifle. It is larger than the .22 long and short and is used in shooting clay targets.



The rimfire cartridge has priming all around the bulging rim. The firing pin hits this rim to fire the cartridge. All modern high-power rifle cartridges are of the centerfire type.

Rifle bullets may be made completely of lead, and the .22 rimfire cartridge, which you may use for shooting your qualifying scores, uses a lead bullet. Bullets designed for higher speed, as used in the bigger hunting rifles, have a stiff jacket made of a copper alloy with a lead core. The jacket may be solid for use in target shooting, or it may have an open point or other modification to make it expand properly in hunting. In a given rifle, bullet weight can vary to some extent. The bullet speed or velocity will vary with bullet weight, the lighter bullet having the higher muzzle velocity.

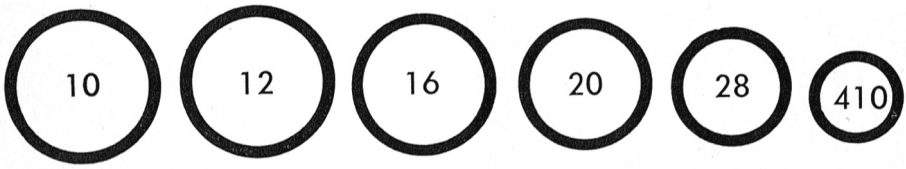
Rifle cartridges come in a bewildering variety of sizes and shapes. Caliber will vary from about .22 caliber (less than ¼ inch in diameter) up to .50 caliber (½ inch in diameter); bullet weight from about 30 grains to 500 grains (7,000 grains to the pound); and muzzle velocity

Center-fire rifle cartridges come in a tremendous variety of sizes and shapes.

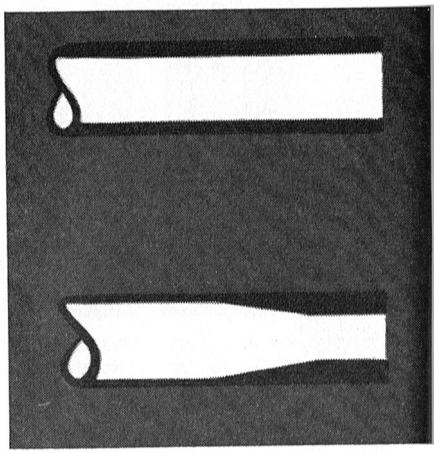
from 1,100 to 4,100 feet per second (750 to 2,800 miles per hour). There is a cartridge with bullet weight and velocity suitable for almost any purpose — from shooting targets at 50 feet to shooting targets at 1,000 yards and from shooting squirrels to shooting lions.

The most popular rifle cartridge in the world is the .22 rimfire, which comes in three kinds, the .22 short, the .22 long, and the .22 long rifle. The .22 short is somewhat less powerful than the others, and is good for shooting on an indoor range or whenever less power is needed. The .22 long rifle is the most powerful and is most used for outdoor target shooting and hunting. You may do your qualification shooting with a .22 rifle.

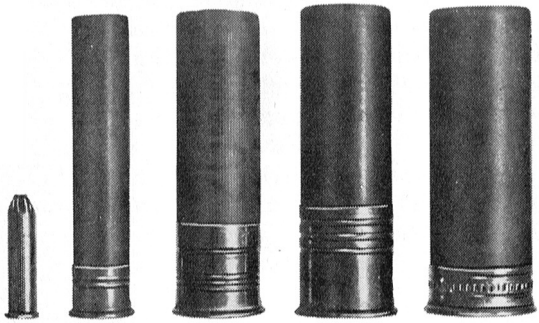
While any cartridge is dangerous if carelessly used, the .22 rimfire is perhaps more dangerous than most cartridges, since it is small and looks rather harm-



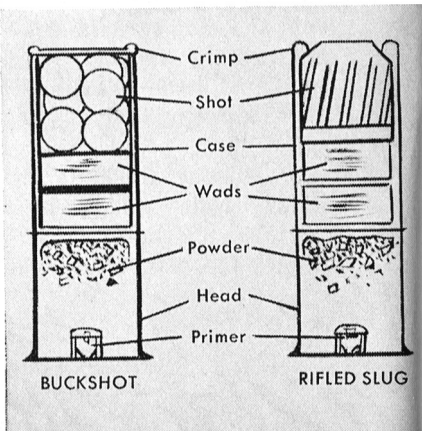
The larger the number, the smaller the bore in a shotgun.

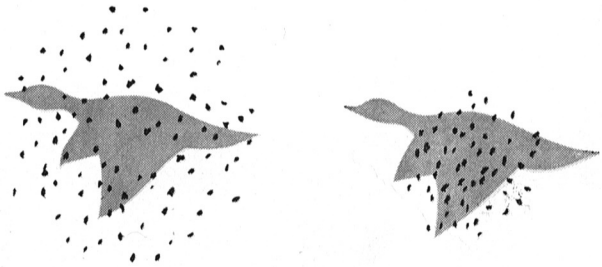


The .22 shot cartridge, on the left, looks pretty small compared with the .410 bore, the 20 gauge, 16 gauge, and 12 gauge shotgun shells. This .22 cartridge is not a hunting cartridge.



These shotgun loads are used in big game hunting.





Choice of proper choke, as illustrated, for the target and range results in a good, wide spread of shot, as shown on the left. A choke that is too tight for the conditions will certainly put the bird down; but the pattern is too small, and you can't take advantage of a real shotgun pattern.

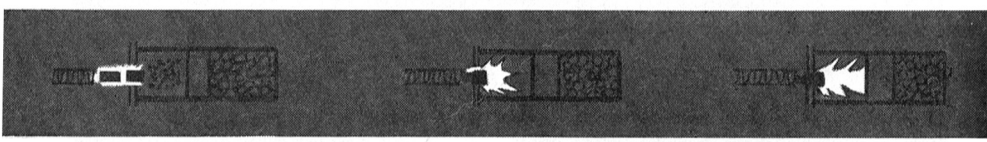
less. But *the .22 bullet will travel a mile* and still be dangerous. Other rifle bullets have a longer danger range—up to 2 or 3 miles.

The real difference between a rifle and a shotgun lies in the inside of the barrel. Where the rifle bore has spiral rifling cut in it, the shotgun has a smoothbore. Instead of shooting a single projectile accurately to long range as does the rifle, the shotgun shoots a large number of small projectiles in a scatter-gun pattern, usable only at short range. The shotgun like the rifle is a precise instrument, but it is not made for precision work, as is the rifle. The small projectiles, which are round lead shot, cover an area but are not effective at long range. With the usual shot loads, the effective range of a shotgun is always under 100 yards, and usually under 50 yards, since the shot loses velocity very quickly. However, the shot pattern can effectively cover an area 3 or 4 feet in diameter.

Unlike that of the rifle, the

SHOTGUN FIRING SEQUENCE

Firing Pin Strikes Primer. Primer Explodes. Powder Is Ignited.



muzzle velocity of shotguns does not vary much, ranging from about 1,150 feet per second to 1,350 feet per second. Total weight of the shot charge varies somewhat, from 1 ounce to 1½ ounces in the 12-gauge, for example, and the lighter load usually has lower velocity. The important variable with a shotgun is the shot size, ranging from the tiny No. 9 (nearly 10,000 to a pound) to the big buckshot (100 to the pound) and even to the specialized single slug (16 to the pound) used for deer hunting. For long range or bigger game, large pellets are used, but only a few can be put in a shotgun shell. For shorter range or smaller targets, a large number of smaller pellets can be loaded. Again, unlike the rifle, there are

Burning Powder Forms Gases.

Expanding Hot Gases Propel Shot.

only a few calibers of shotguns, the most popular being the small .410 bore (about ⅜ inch in diameter), 20 gauge, 16 gauge, and the big 12 gauge (about ¾ inch in diameter). The main difference between these lies in the heaviest shot load each can shoot, and not in the pattern size. The smaller gun is usually lighter, however.

The inside of the barrel will show one other difference between the shotgun and the rifle. The rifle barrel is a straight, cylindrical tube for the full length ahead of the chamber. The shotgun barrel is usually a bit smaller at the muzzle or is "choked." The choke gives a considerable amount of control on the spread of the shot, so that you can get a good 40- or 50-yard pattern of shot with "full choke"; or a more open pattern, good at shorter ranges, with less choke.

There are a couple of exceptions which may confuse you. We mentioned one earlier—the single slug in the shotgun. This is used for short-range deer hunting but has less velocity and shorter range than most deer rifle cartridges. It does make the smoothbore more usable, but the single slug calls for the same sights and shooting technique as the rifle. The other exception is the .22 shotgun. This is a .22-caliber gun with no rifling—a smoothbore. It shoots a special .22-caliber cartridge, loaded with shot, designed to break the small clay birds. This is not an effective hunting cartridge, but you may earn your shotgun qualification with it.

Sighting a Rifle and Shotgun

2b Draw and explain a diagram showing proper sight alignment and a proper sight picture with the rifle; explain how the aiming process differs with the shotgun.

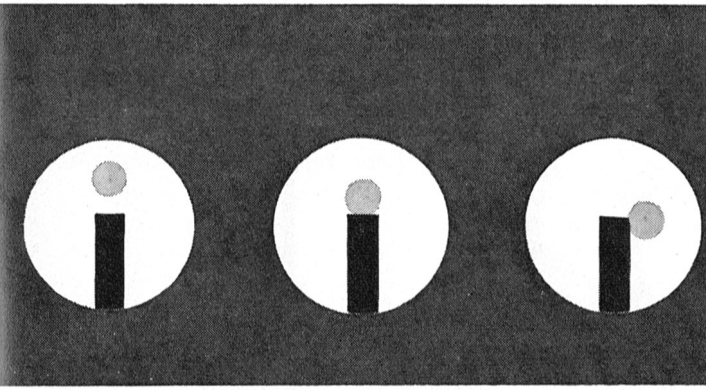
Sights are put on a rifle for two purposes, and you should be careful not to confuse the two. The primary purpose is so that you can point the rifle at exactly the same spot each time–line up the rifle exactly on the target. This will result in your shotholes on the target being very closely grouped together – a "tight group." The first and most difficult thing for you to learn is how to shoot a tight group. Nearly all your effort in learning to shoot the rifle is devoted to learning how to do precise work with this fine instrument.

The second purpose of rifle sights is far less important and is learned fairly easily. This second purpose is to put the center of your group on the center of the target, which will give you the highest score and the best chance of hitting right in the center. Rifle sights can be moved sideways and up and down to allow for changes in wind, distance, light, and other factors.

The first purpose of the sights –ensuring exact, precise alignment – is called "sighting" or "sight alignment." The second purpose of the sights–the mechanical movement to center the group on the center of the target –is called "sight setting." Sights are usually set by turning knobs, and usually there are graduations on the sight so they can be carefully adjusted and the setting can be recorded.

If you want to hit the target in the center consistently, you must shoot a small group and you must have the right sight setting. Since shooting a small group is the difficult job, and sighting is a big part of it, let's talk about sighting, sight alignment, and picture first.

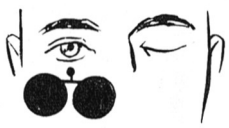
There are various methods of

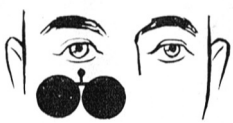


When sighting a rifle, try to get the round bull's-eye of the target to rest gently on the top of the front-sight post as shown in the center view.

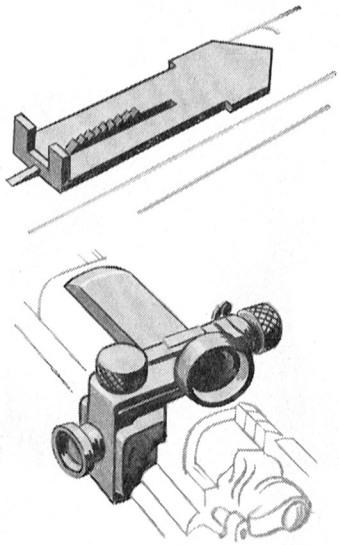
lining up the sights, and almost any method will be OK if it is used consistently. However, over the years the world's best shooters have determined that certain methods are the best for target shooting. We will talk mostly about peep sights, as they are practically always used in target shooting and very extensively in hunting.

There are three parts to the sighting system: the rear sight, the front sight, and the target. The rear sight is a small hole in a metal disk. The size of the disk is not important and the size of the hole in the disk is not important, as long as it is big enough. Take a good look at that peep sight now—this is probably the last time you will look *at* it. You look through the peep sight, not at it. Get your eye as close to the disk as you can and you will then see through the hole

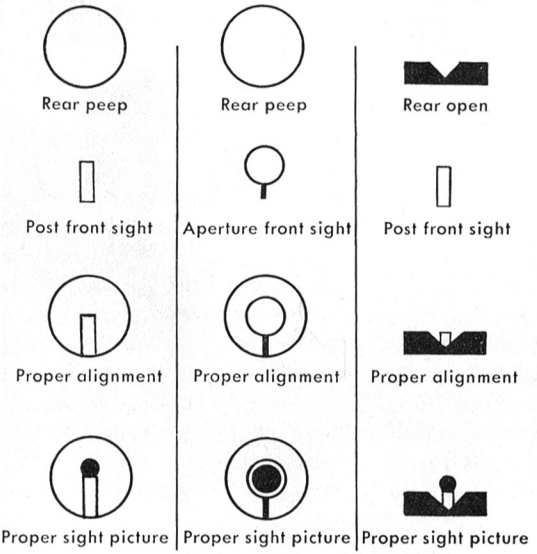




Generally, you are better off to shoot with both eyes open when using the shotgun. Instead of looking at the sights, as you do with the rifle, you concentrate on the target. But if your left eye (for a right-hander) is your "master" eye, you may have to shoot a shotgun with the left eye closed.



The micrometer type rear peep sight is used for nearly all competitive target shooting and is widely used for hunting.



Here's how the sights should look when using a peep rear and post front, a peep rear and aperture front, and an open rear sight and post front.

with a black blur all around.

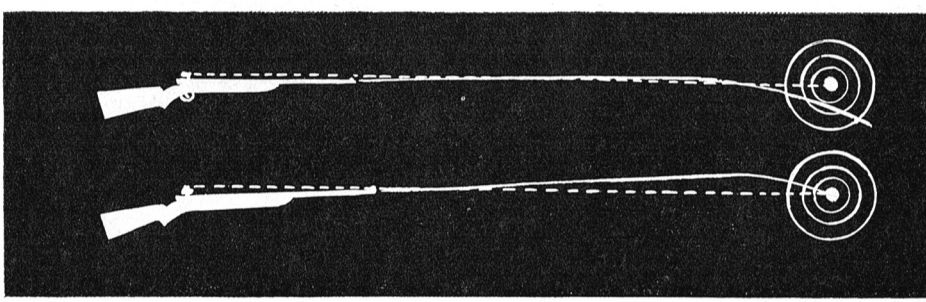
The front sight is a short metal post with a flat top and straight sides. You look *through* the rear peep at the front sight. Center the top of the front sight in the rear peep, concentrating on looking at the post. This is proper sight alignment and you should practice this until it becomes second nature.

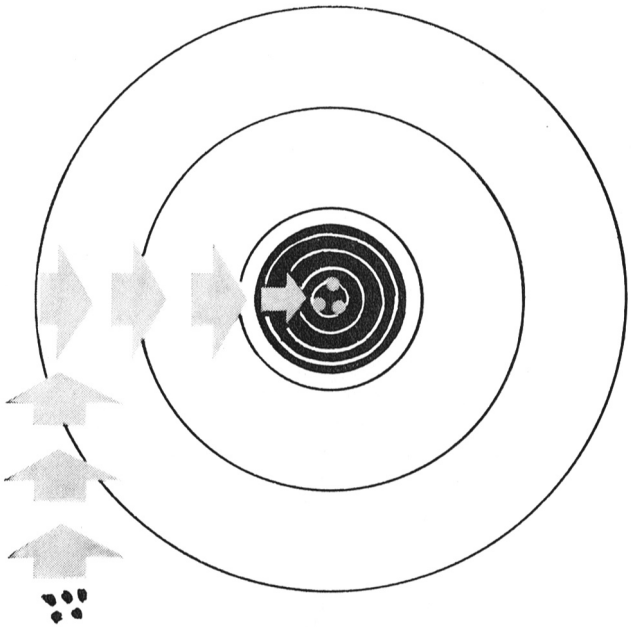
The third part of the sighting system, perhaps surprising to you, is the least important of all —the target. With the front sight centered in the peep, try to get the round bull's-eye of the target sitting gently on top of the post. If you look hard at the bull, the front sight may be a bit fuzzy, and if you look hard at the sight, the bull may be a bit fuzzy. If you are lucky, they will both seem sharp. But whatever you do, be sure the front sight is sharp and clear, no matter how fuzzy the bull may be.

If all goes well, the bull will sit quietly there on top of the front sight, waiting for you to shoot it. But usually the bull will appear to be bouncing and dancing around, never holding still for a moment. Don't worry about this, it happens to all of us. Keep concentrating on your sight picture. Later we will discuss how to shoot this skittery target.

Even you can put all your shots through the same hole, you won't be very effective unless you can center them on the target, and this is why sights (usually the rear sight only) are adjustable. A bullet starts to fall away from the line of the rifle barrel as soon as it leaves the muzzle. If you are going to throw to home plate from the outfield, you have to throw the ball high in the air in order to reach it. In the same way, to reach a distant target with a bullet, the rifle barrel must be pointed up in the air, a different amount for each distance. As we change range, it is

Rifle sights are made adjustable to make allowance for bullet fall or trajectory, which is different for every distance.

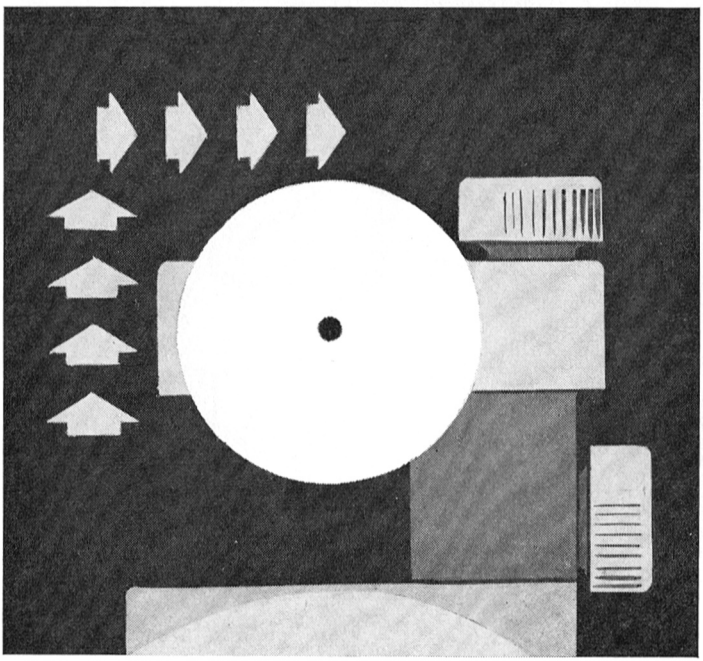




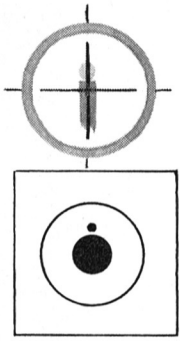
If you want your group on the bull's-eye, move the rear sight up and right.

necessary to change the "elevation" by moving the rear sight up or down. The rear sight can usually be moved sideways, too, to make allowance for crosswind and for differences in shooters. In order to shoot good groups, you must use the right sight alignment on every shot. In order to hit center, you must

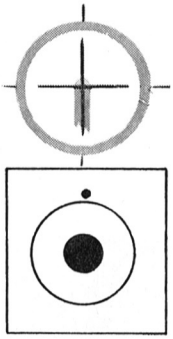
Move the rear sight in the direction that the hits on the target should move.



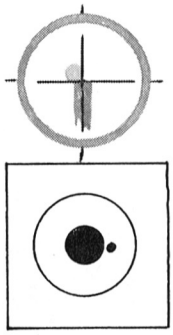
move the rear sight sideways or vertically until your group is neatly centered around or in the bull. *You move the rear sight in the direction you want to move the bullet hole.* Besides the peep rear sight and post front sight, there are other kinds of sights used on rifles which we should look at hastily. The "aperture" front sight is a disk with a round hole in it. When using the aperture front sight, you have three circles – the round hole in the rear peep sight, the round hole or aperture in the front sight, and the round bull's-eye. You get these three round things all lined up, with the front aperture centered in the rear peep as



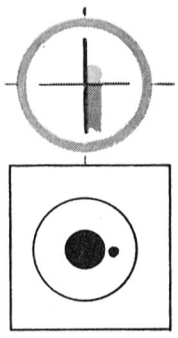
Front sight too high



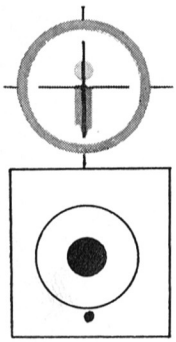
Bull's-eye too low



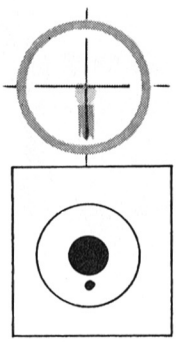
Bull's-eye too far left



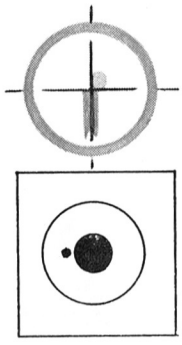
Front sight too far right



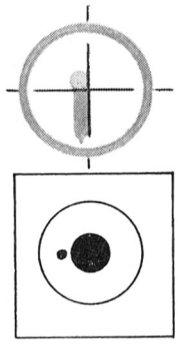
Bull's-eye too high



Front sight too low



Bull's-eye too far right

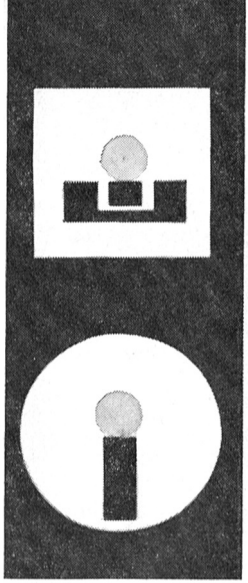


Front sight too far left

the first step, and then the round bull's-eye centered in the front sight aperture. At least you try to keep the bull centered in the aperture as best you can. Once again you concentrate on lining up the front sight.

Some rifles may have a rear sight which is a U or notch in a plate, usually mounted on the barrel. With this sight you center the front post in the notch and have the top of the post just even with the top of the rear sight. With this open sight, you must look *at* the rear as well as the front sight and the target. The open sight is not as accurate or as easy to use or effective as the peep sight.

The "clock" system is used to give direction on the range. The direction you are shooting is 12 o'clock, to the right is 3 o'clock, while 6 o'clock is behind you and 9 o'clock is on your left.



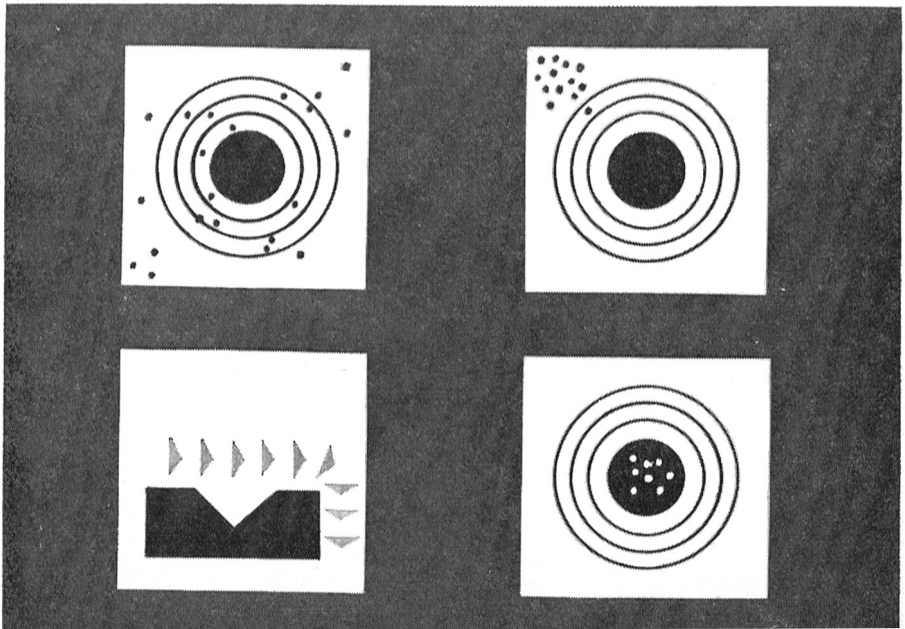
When using the open sight, the front-sight post should be centered in the notch with the top of the front sight even with the sides of the notch. When using the peep sight, the top of the front-sight post is centered in the rear peep sight.

Top left. A big, scattered group, centered on the bull. This shooter needs more practice on sighting, position, and trigger squeeze. No sight setting or sight adjustment will help.

Top right. This is a good group and the shooter should be proud of it.

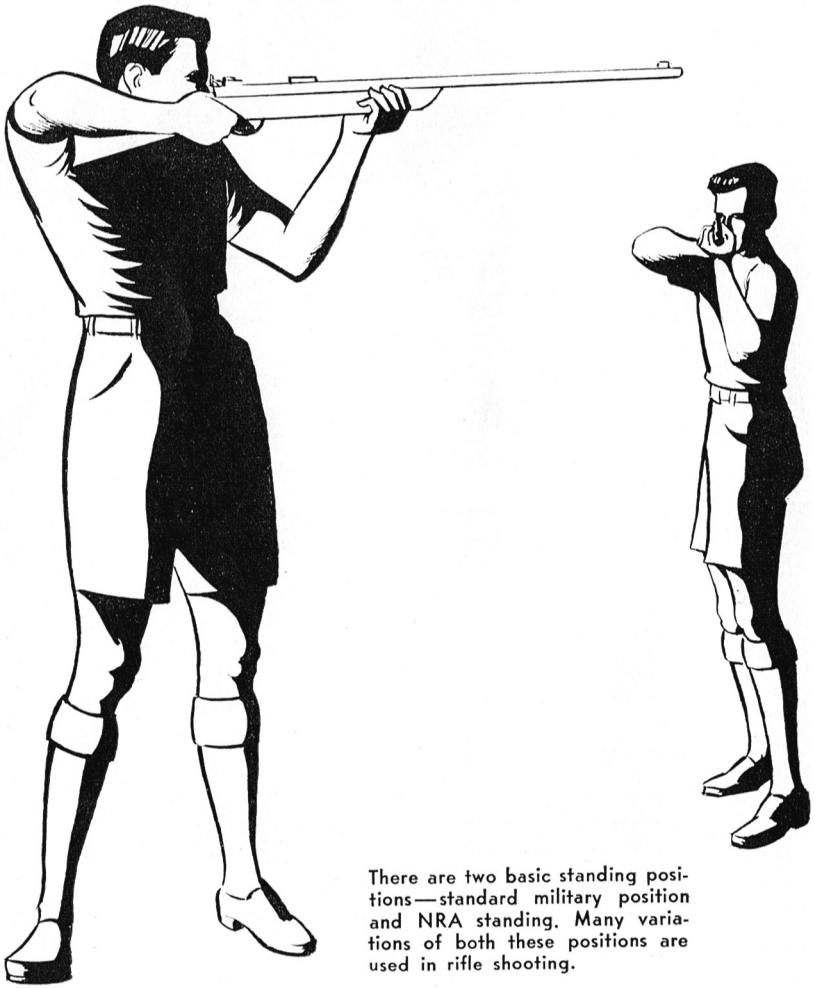
Bottom right. To get the highest score on the target, the group should be centered on the bull.

Bottom left. To center the group on the bull, the sights should be moved right and down.

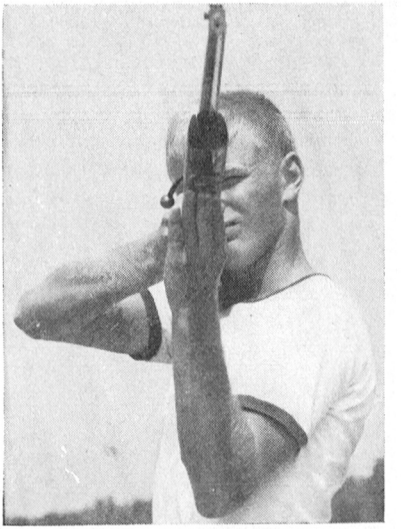


Rifle Shooting Positions

2c Explain the principles of good rifle shooting positions; demonstrate three positions; explain and demonstrate the differences between a good rifle shooting position and a good shotgun shooting position.



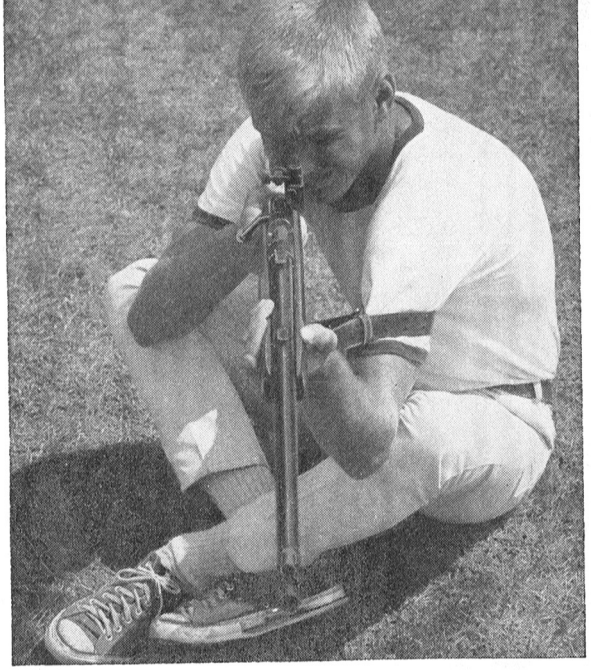
There are two basic standing positions—standard military position and NRA standing. Many variations of both these positions are used in rifle shooting.



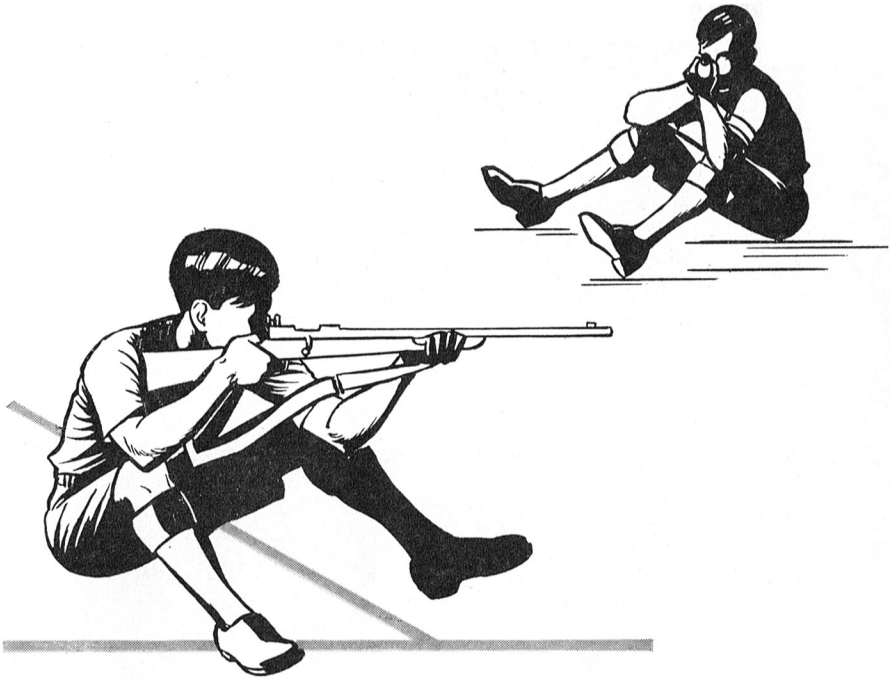
In the standing position, the shooter should stand almost facing the target, with feet spread apart and knees straight but relaxed. The left hand is placed on the forearm of the stock and the elbow is directly under the gun. The left arm should not touch the body.

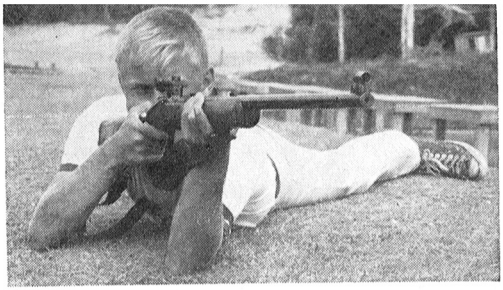
For the NRA standing position, the shooter's left hand is allowed to slide back toward the trigger guard, and the gun rests on the thumb and fingers which form an inverted tripod. The upper left arm is against the body and the elbow is supported by the hip.

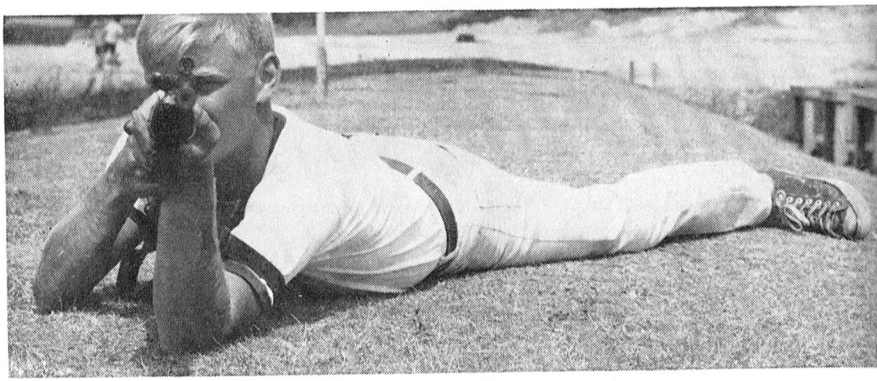
As we have seen, rifle shooting is a precision sport. The foundation is a solid, steady position. The general rule in rifle shooting is to use as *few* muscles as possible and to use them as little as possible. Instead of using muscles, which get tired and shaky, use your bones as much as you can to support the rifle.

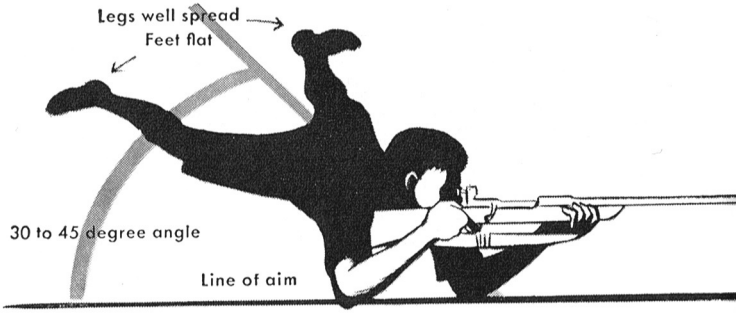


In the sitting position, again your left elbow should be directly under the rifle and it should rest firmly on the left knee or leg. The weight of the right elbow is taken by the right knee. Shift your position around until the rifle points easily and naturally at the target. Your legs should be crossed or spread wide apart, at your choice, as long as you get the most comfortable, relaxed, steady position.

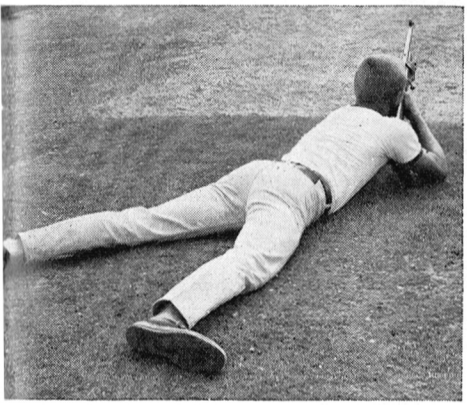




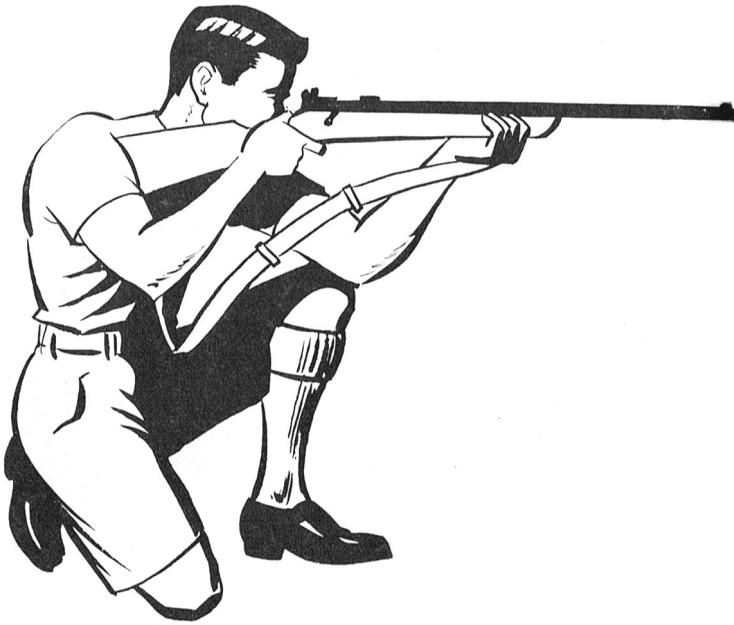



Legs well spread
Feet flat
30 to 45 degree angle
Line of aim

In the prone position, for example, you lie down facing the target, with your body at an angle to the line of fire. The rifle is against your right shoulder and your right hand holds the grip. Most of the rifle weight is taken by the left arm. If you put your left arm directly under the rifle and let the rifle lie flat in the palm of your hand, you are taking best advantage of your bone structure. The weight of the rifle is taken by the hand and wrist and transferred to the arm bones, ending up with your elbow solidly on the ground.



Carrying this one step further, your feet should be turned out and lying flat on the ground, rather than resting on the toes —but don't force the position. Close your eyes for a moment and relax everything as much as you can. Open your eyes and glance through the sights. If the rifle isn't pointing at the target, shift your position slightly right or left, backward or forward while keeping your left elbow in position. You should be able to get the rifle pointing naturally at the target without any muscular strain. Let the bones do the work—no muscles!

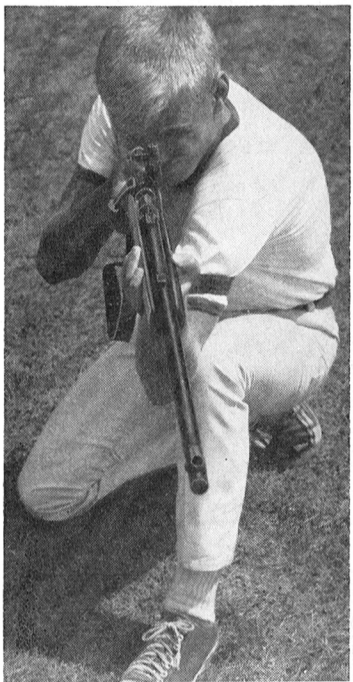


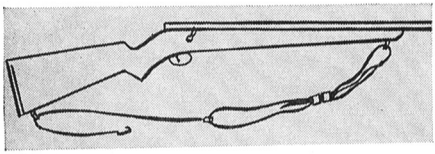
for your right elbow, but it has been found best to keep it high, rather than letting it hang down. By keeping it high, you make a pocket for the butt of the rifle.

The rifle sling or strap is often used to help support the rifle and to hold it steady. The sling is fastened to the forearm of the rifle. A loop is put around the upper part of the left arm (for a right-handed shooter), and the strap passes smoothly across the wrist to the forearm fastening. The strap should be fairly tight, and it will relieve your left hand of the job of grasping the rifle. The left hand merely lies flat and

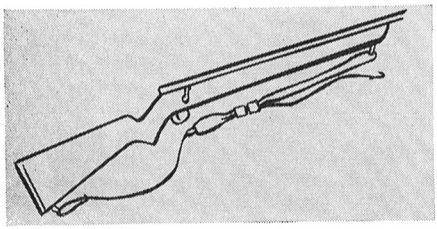
In kneeling, again let the left arm and left leg carry the rifle weight. Sit on the side of your foot, if you can; or sit on your heel, if you must. There will be no support for your right elbow, so you will have to let it hang wherever is convenient and most comfortable for you.

As you move the rifle further away from the ground it gets less support and the position becomes less steady, with the standing position being the most wobbly. In the standing position, your left elbow will get only as much support as you can give it by resting it against your hip or chest. There will be no support

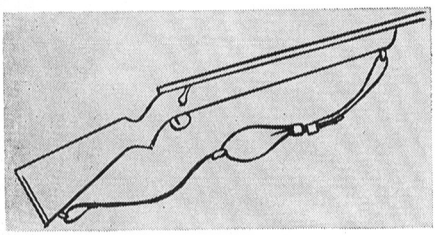




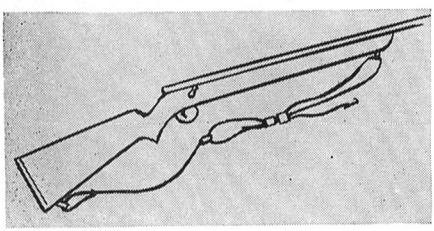
1. The hook on the short end is disengaged and rehooked in one of the holes in the short end.



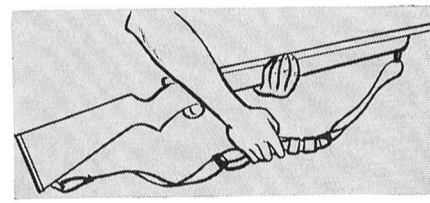
2. The top hook is released and the arm loop drawn down to about the trigger guard.



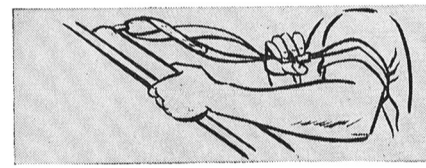
3. The top hook is reengaged a few holes from the end of the long strap.



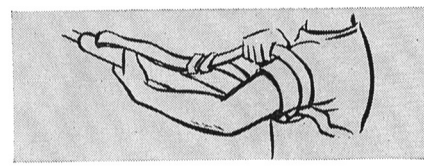
4. The leather bands are moved toward the upper swivel.



5. The sling is given a half-turn, counterclockwise with the right hand.



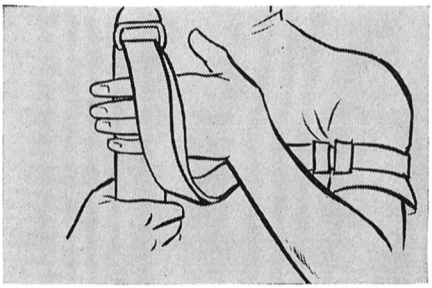
6. The left arm is thrust through the loop at the lower end of the top strap until it is well up close to the shoulder.



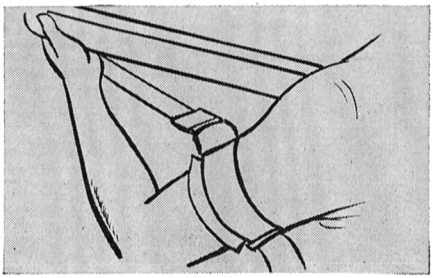
7. The leather bands are pulled down snug against the arm to hold the loop in place.

acts as a platform. The sling is a very big help in the prone, sitting, and kneeling positions, but is of much less help in the standing position. The other end of the sling may be fastened to the butt stock of the rifle, and it then becomes very useful and helpful as a carrying strap.

The shotgun does not have a sling, since the one thing you



8. The left hand is swung over the sling and then placed on the forearm of the rifle inside the sling.



9. The sling lies flat against the back of the hand.

don't want with a shotgun is a steady, immovable position.

Shotgun Positions

Although the shotgun is used only in the standing position, this is not much like the rifle standing position. Where the rifle position is easy, relaxed, solid, and steady, with the shotgun you need to be slightly tensed, ready to move quickly in any direction. The left arm should reach out on the forestock so that you have good control and so that the left arm is clear of your body. Weight should be slightly on the forward left foot, and you should lean forward slightly to permit easy swinging and to permit a quick recovery from the recoil of the shotgun in case it is necessary to put in a fast second shot.

You face much more toward the target than you do with the rifle, so that you can easily move in any direction. For a right-hander it is easier to swing far to the left than it is to swing far to the right. So your foot position has to allow for this, when possible. The feet should be spread a bit, with the left foot pointed more or less at the spot where you expect to shoot, whereas in rifle shooting both feet are pointed at right angles to your line of fire. Weight is slightly more on the left foot. Shotgun swing comes from the ankles all the way up. Your whole position is based on this.

Incidentally, we have talked about the right-handed shooter all the way through this book. This is not to say that the left-handed person can't be a good shot. There are many outstanding left-handed shooters. To simplify this, we have talked only about shooting from the right side. A left-handed just has to change "right" to "left" in the text and he is in business.

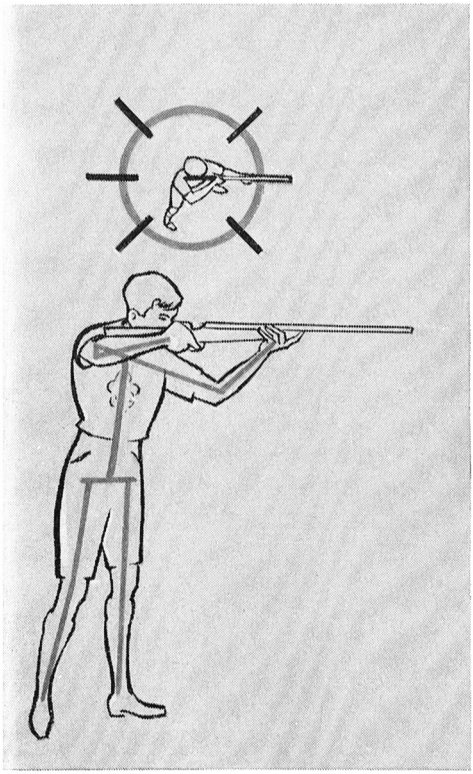
Since we saw that the shotgun fires a spread pattern of small pellets so that we can hit a moving target, you will not be surprised to find that it does not have fine, precise sights, as does the rifle. In fact, many shotguns don't have any sights at all. At the most, there will be a small bead on top of the barrel at the muzzle and another about halfway down the barrel. But these are merely for checking and are not used in shooting.

The shotgun is not carefully aimed like the rifle, but is pointed, much as you point your finger. The muzzle of the gun acts as your front sight, and your face on the stock acts as the rear sight. And just as with the rifle, if you change the rear sight—the position of your face on the stock – you will change where you hit. Consequently, it is necessary to put your face on the stock exactly the same way each time. This is one of the keys to good shotgun shooting!

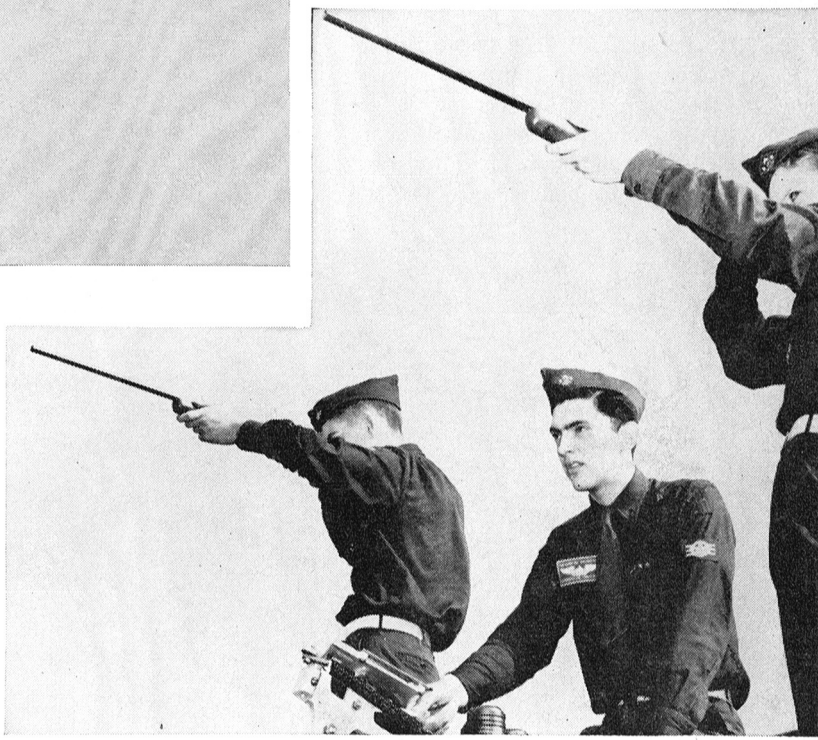
When shooting the rifle, you aim directly at the target each shot and you adjust the sights as necessary until you hit center. When shooting the shotgun, however, you rarely aim directly at the target and you never change your "sight setting" – the position of your head on the stock.

In order to hit a moving target with the shotgun, you must lead it, just as you must lead a running pass receiver with a football. You know from experience about how fast the receiver can run and how long it will take the football to get out there. So you throw the ball well ahead of the runner, expecting ball and receiver to arrive at the same place at the same time. Shotgun shooting uses the same technique. Nearly any moving target takes some lead, since it takes the shot charge a considerable time to get from the gun to the target.

It will take some practice for you to get the feel of proper leads; but the more you shoot, the better you will become at estimating the right leads for targets coming from any direction. Leads may be as much as several feet for a crossing target or as little as nothing for a target going directly away from you. The



The shotgun shooter must be ready to swing in any direction — right, left, up, or down. He should be slightly braced to recover from the recoil and fire a quick second shot if that should be needed.



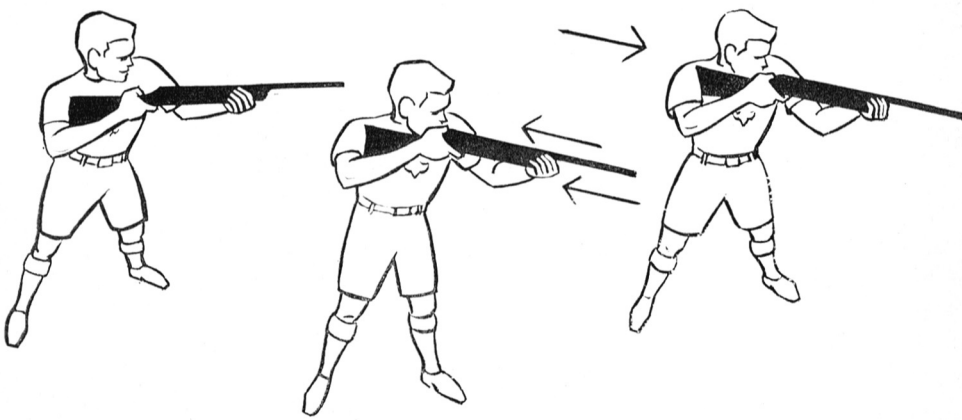
lead has to be applied in the direction the target is flying relative to you. A safe rule is to always be ahead of the target. If it is moving to the right, be to the right of it. If it is coming overhead, be out in front of it. If it starts low and is climbing away from you, hold it.

There is another major difference between sighting with the shotgun and the rifle. With the rifle you concentrate on the front sight, while with the shotgun you concentrate on the target. You make an estimate of the size of the target, its distance from you, the direction it is flying, and its speed. You feed these things to your built-in computer and it gives you the answer as to direction of lead, amount of lead, and when to shoot. The important thing is to concentrate on the target. You will see the muzzle of the shotgun as a gray blur, not in sharp focus.

There is still another major difference between sighting with the rifle and sighting with the shotgun. In rifle shooting you normally use only one eye—the right eye in the case of a right-handed shooter. The left eye doesn't do any work, and usually is closed so it won't confuse the sharp picture we want to get with the right eye. In shotgun shooting, on the other hand, it is best to use both eyes. We are shooting at a target, which is constantly moving, and we can get a more accurate estimate of range and speed with both eyes open. It's desirable to shoot with both eyes open if you can.

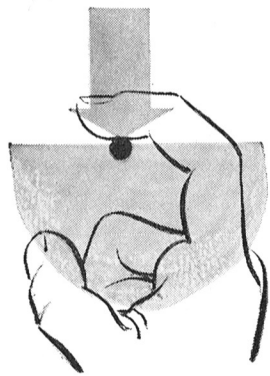
There is an exception, however, and that is if your left eye (for

a right-handed shooter) is your "master" eye. Bring your arm up and point your finger at a distant object. Close one eye, open it, and close the other. When you are looking with one of your eyes, your finger will appear to be still; but when you look with the other eye, your finger will appear to jump sideways. If your finger stays put, when you look with the right eye, but jumps when you look with the left; your right eye is the master eye. This is normally the case with right-handed people. If you are left-handed, the reverse is true. But if you are right-handed with a left master eye, you will be better off to shoot with the left eye closed (or vice versa). For more help on sighting and shooting a shotgun, see pages 27 and 50-53.



The Trigger

2d Explain and demonstrate the proper use of the trigger in rifle shooting; explain and demonstrate the proper use of the trigger in shotgun shooting.



When shooting either the rifle or the shotgun, it is necessary to pull the trigger to release the firing mechanism without disturbing the gun. In the larger calibers, the gun makes considerable noise and may kick you a bit. The common reaction is to tighten up just before the trigger is pulled to resist the kick and noise. This leads to jerking the trigger, with resultant wide shots and unaccountable misses. Although with both rifle and shotgun you want to release the firing mechanism without disturbing the gun, the details of how this is done differ between the two types of guns.

The differences come about through the nature of the weapon and the target. The rifle is normally fired at a stationary target, which means that there is plenty of time for the shot and there is no rush about pulling the trigger. With this precision instrument you try to put all your shots in the same hole. The slightest thing that interferes with this precision will reduce your score. The rifle trigger must be pulled with a rather slow, gradual increase in pressure by your trigger finger. You will find that the sights wobble around, and only occasionally will things be lined up just the way they should. The great temptation at that moment is to yank the trigger while things look good. This may give you a center shot—but more likely it will give you many wide ones. Don't yank it. Even if you don't yank the

shot, you may find that you have a tendency to grab the rifle with a grip of iron, in an attempt to hold it still and reduce the wobbles. This won't work either. The only thing that will help is a great deal of careful practice, which will gradually reduce the wobble area. But when you are starting out, you will have to accept your normal wobble. As long as the sights are properly lined up, forget about the wobble and concentrate on trigger squeeze.

This "wobble area" may be something new to you. We've mentioned it, but it is so important that we should look at it more carefully. As we saw, the rifle won't hold still when you put it in position. If you put a pencil on the end of the rifle barrel and lightly touched the target with it, after a few moments you would have a pattern of pencil lines zigzagging back and forth, up and down across the face of the target. This is your wobble area and as long as your gun is pointed in this area, it is OK to put the pressure on the trigger. If you hold too long on any particular shot, however, you will get tired and your wobbles will become very great. In that case, take the rifle down, rest, and start all over again. Don't think you are alone with the wobbles—the champion has them too. But he has so trained himself through exercise, practice, and more practice that his wobble area is much smaller. But he still has a wobble area and he still shoots as long as he is moving inside that area. If you want to become a champion—or just to improve your scores – practice will help you reduce your wobble area and to apply proper sight alignment to each shot. As you get more experience you will learn to squeeze the trigger gradually when the sights look good, hold this when they drift away, and apply more pressure when they look good again. In this way, the shot goes off only when the sights are lined up. This takes much practice.

Trigger operation with the shotgun follows the same principle of releasing the trigger smoothly without disturbing the gun. But it must be done very quickly. Since the shotgun is used on moving targets, you have only a few seconds when the target is within range, and, if you miss your chance—that's it.

The shotgun trigger must be pulled quickly and decisively in that fraction of a second when the bird is within range and when your swing and lead are just right. Just as with rifle shooting, it is important not to tighten up your shoulder or body muscles in anticipation of the noise and recoil, since this will move your gun unexpectedly. You don't tighten up with the trigger hand either, but you give the trigger a quick flick to the rear, sometimes called trigger "slap."

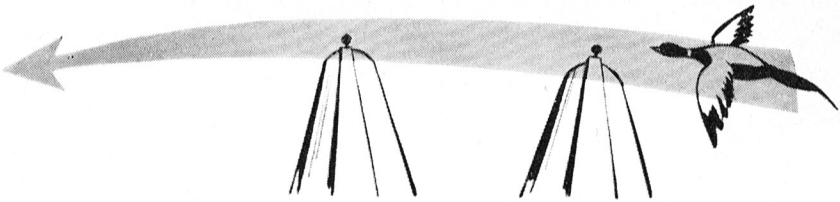
Shotgun Swing

2e Explain and demonstrate shotgun swing: Explain why "follow-through" is so important.

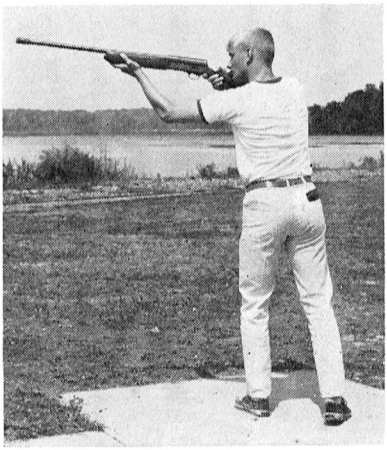
We have already talked about the necessity for giving *lead* to a moving target. The shot charge from a shotgun will take well over 1/10th of a second to travel 40 yards. A target traveling across in front of you at 60 miles an hour would require over a lead of 9 feet. Fortunately, most targets don't travel quite that fast, but this gives you some idea of the importance of lead. The amount of lead, as we saw, varies with the range, the angle of flight of the target, and the target speed; you learn to compute lead quickly only by experience. The important point, again, is that you generally must lead almost every moving target.

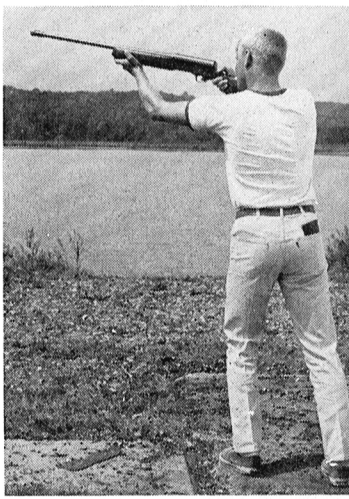
There are various ways of getting this lead. An obvious way that you might think of would be to poke the gun muzzle ahead of the bird, stop the gun, and pull the trigger when the lead looks OK. You may occasionally hit a bird using this method, but you'll be lucky if you do. This is the poorest method of shooting and you should avoid it.

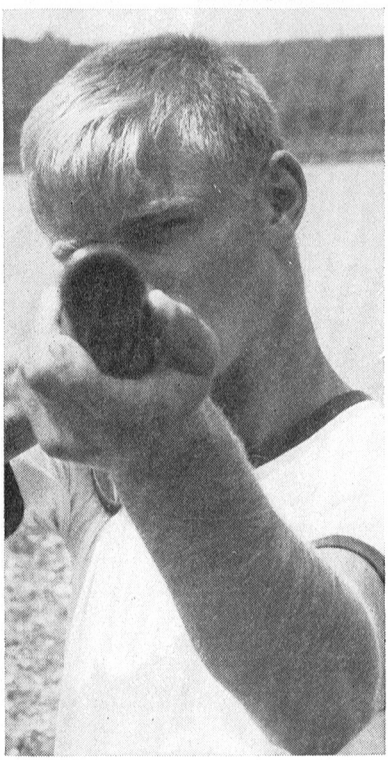
A much more satisfactory method is to swing out ahead of the target by the amount of lead you estimate is correct and to keep swinging along as you pull the trigger. This eliminates any human reaction time and is a good method of shooting. But watch out! There is a very common tendency to quit swinging as soon as the shot is fired—and this often turns into a tendency to quit swinging just *before* the shot is fired. This always results in a miss, well behind the target. To avoid this common fault, keep on swinging while you get the shot off and follow-through —keep on swinging after the shot has been fired. Pretend you have a paintbrush on the end of the gun and that you are painting a streak for the target to run into.

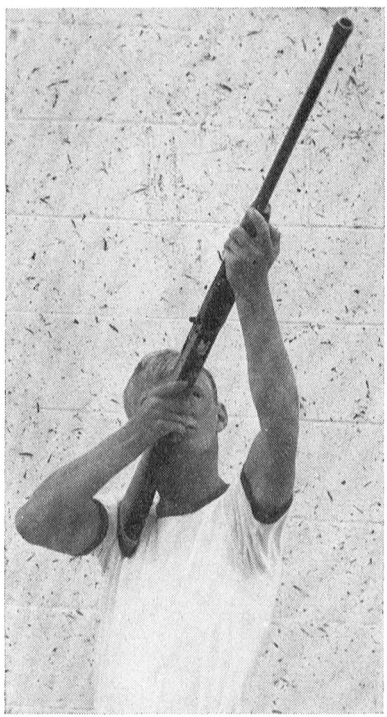


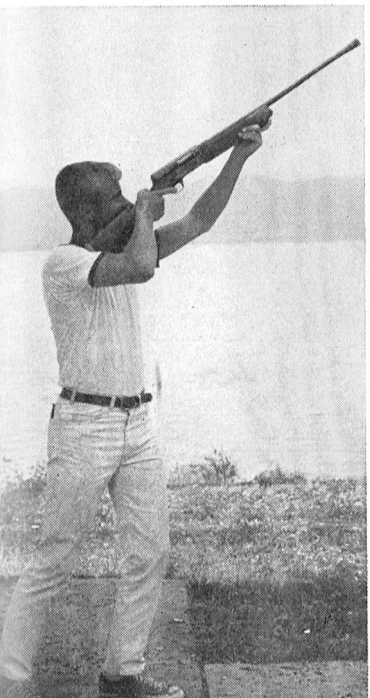
Keep your gun swinging and paint a streak across the sky!







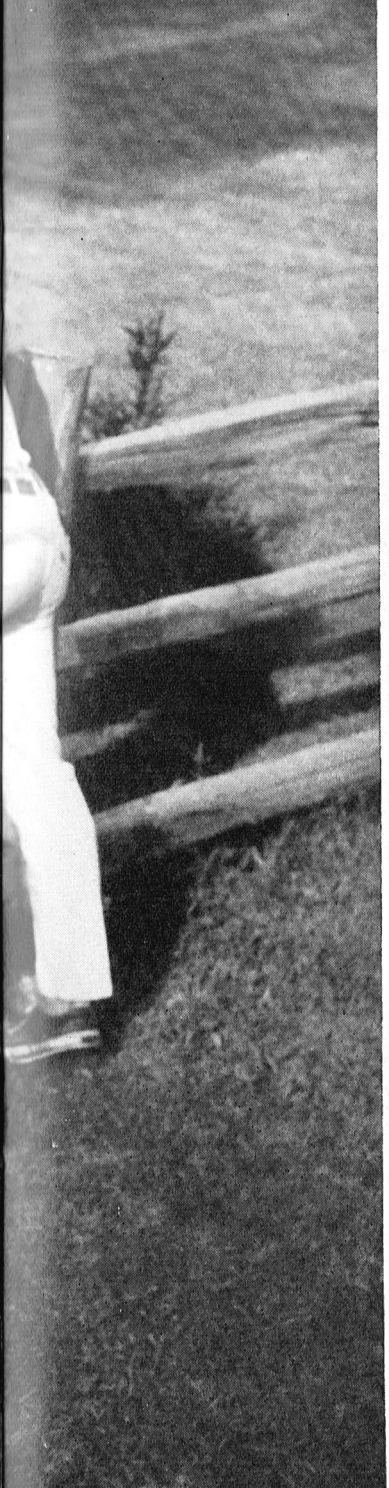




The third method of shooting is somewhat like the second except that the shooter swings much faster than the bird. He swings from behind the target up to the target and well out ahead in one smooth, fast swing. The shooter decides to pull the trigger just as his gun points at the target. But due to human reaction time, time for the cartridge to fire, etc., when the shot charge leaves the muzzle, the fast-swinging gun is pointing well ahead of the bird – thus giving the necessary lead to the target.

Both these good methods require you to swing your gun fast –at target speed or faster. In both methods you will fail if you stop your gun swing before the shot charge comes out. Follow-through means that you keep on swinging after the gun has fired. Follow-through is important to keep you from stopping the swing too soon.

Swing and keep swinging! Follow through! If you don't swing and follow through, you will usually shoot behind the target.



Safe Gun Handling

3a Explain the general principles of safe handling of guns and ammunition.

It would be easy to make up a list of safety rules for handling guns and ammunition that would fill this page – and many more pages. All these rules would undoubtedly be important and things you should know to guide you in handling firearms and ammunition. But you're not likely to remember all these rules, and since they all get back to three basic principles, we want you to learn these basic principles and how they are applied. If

you remember and apply these few things, you will be a safe handler of guns and ammunition.

The first and most essential principle to remember is: *Treat every gun as if it were loaded and ready to go off!*

It doesn't really make much difference whether the gun is loaded or not and it doesn't really make much difference whether the gun does discharge or not. As long as you are following this principle, you will have it pointed in a safe place and, while you may get an unpleasant surprise, no one will be hurt. Remember this basic principle and follow it every time you handle a gun.

You treat every gun as if it were loaded whether you are at home, on the range, or in the field. This means that you never let the gun point at you or anyone else. But, you my ask, what about the safety – doesn't that keep a gun from firing by accident? The answer is *no,* it does not! The safety is not to be relied on. In the first place it may be off when you think it's on. This frequently happens when you're in the field and getting a lot of exciting shooting. Besides, the safety is a mechanical device and is subject to failure. So keep the safety "on" whenever you can because it may add a little something additional, but certainly do not trust a safety.

When you're loading or unloading a gun, be especially care-

ful, since a gun that is dirty, out of adjustment, or with a broken part sometimes will fire during this process even though you haven't touched the trigger. It's very easy to be careless with the gun muzzle when you're involved in loading or unloading a gun.

When you are hunting in the field with companions, you will have to know where they are all the time. Of course you wouldn't shoot unless you knew it was safe in that direction. But you also have to keep track of your companions so your gun won't be pointed at them as you carry it. A branch or twig might catch on the trigger and fire it. It is easy to slip or trip and fall when you are concentrating on finding game. Carry your gun so that it won't be pointed at you or your companions if you fall. Guns have been known to go off from the shock of being dropped.

As long as you follow this first principle, you will be a safe gun handler. But there are obviously times when you cannot follow it exactly; for example, when you are cleaning a gun. So what do you do? There is one other basic principle which will cover practically all other cases when you must handle a gun.

This other principle is: *An open, empty gun is safe! Open the action, remove the magazine if possible or be sure it is empty, be sure the chamber is empty, and leave the action open.* As long as you keep the gun in this condition, it is safe. But the moment you close the action, you must treat the gun as if it were loaded and ready to fire.

With the action open and no ammunition in magazine or chamber, the gun cannot be fired. In fact, almost any time when you are not actually shooting, open the action, take out the ammunition, and leave the gun open. This tells both you and your companions that your gun is safe.

Every time you pick up a closed gun you assume that it is loaded and act accordingly until you can clear it. We will mention this again later, but it is worth emphasizing—removing the magazine from a gun does not unload it! Removing the magazine does not take the cartridge out of the chamber. Open the action, check the chamber for ammunition, and leave the action open.

You may want to put your gun away in the cabinet or in a gun case with the action closed to protect the mechanism. Remember that as soon as the action is closed, you treat the gun as loaded. To put the gun away, closed in a case, once again examine the action to be sure it is empty. Point the muzzle in a safe direction, close the action, and pull the trigger. Then put the gun in the cabinet or case—treating it as a loaded gun.

If you handle guns long

enough, you may very well have an unintentional discharge and it's a most frightening thing! You don't expect it, you know the gun is safe, but it certainly did go off—where did you have that muzzle pointed? Since you never know when this unintentional firing may happen, you must play it safe all the time.

The other thing that you should remember concerns ammunition. We can sum this up in a few words: *Ammunition is dangerous, don't play with it.*

The rifle or shotgun cartridge is a harmless appearing thing, and it is harmless when it is handled correctly. But it can also be very dangerous if it is handled incorrectly. The primer by itself and the powder by itself are both powerful and dangerous. When you combine the two you have a real opportunity for serious trouble. The primer, of course, is designed to be fired by a sharp blow, but it will also go off under heat. It's very unsafe to pound the primer with a rock or hammer, hit it with a nail, or throw it in a fire. Even a primer by itself is plenty dangerous and has more than enough power to put out an eye or give a very unpleasant flesh wound.

Factory-loaded cartridges are carefully designed, made, and inspected to be sure they're accurate and safe. A factory load is safe in a gun for which it was chambered if the gun is modern and in good condition. Some very old guns may not be safe with modern ammunition, and, of course, if the gun has been abused and not well taken care of, it might not be safe. Some factory loads may not seem to have much powder in them, and you may wonder why the cartridge case is not full of powder. Over the years as better powders have been developed, smaller and smaller quantities are needed to give the necessary force. The factory load will have all the powder in it that is safe. *Don't ever add more.*

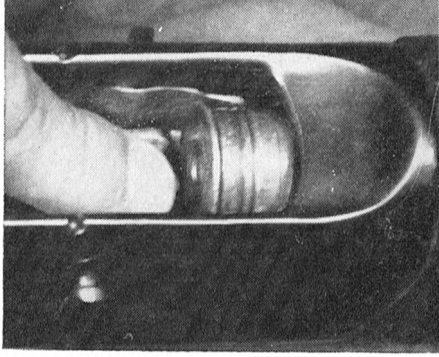
The cartridge case and a gun are very carefully designed to go together. There are many different calibers of cartridges so you must be very careful to use only the correct cartridge for your gun. If you use the wrong cartridge, the gun may blow up and seriously injure you. Be very sure; this is no place for experimenting with ammunition.

If you follow these three general principles of gun and ammunition handling, you are not likely to cause yourself or anyone else any harm. Just remember that the gun and ammunition are not playthings. As long as the gun action is closed, you treat it as a loaded gun. If the action is open and the chamber and magazine have been examined to make sure they are empty, then the gun can be handled with more freedom.

Magazines

3b Explain the safety precautions for guns having fixed or detachable magazines and the special precautions necessary for tubular magazines.

In a repeating firearm, ammunition can be found in two places: the chamber and the magazine. Removing ammunition from one location does not remove it from the other. For the gun to be safe, ammunition must be removed both from the chamber and the magazine. In some guns the whole magazine is designed to be readily removable and when it comes out it brings its ammunition with it. But that still does not unload the chamber. Many people have been accidentally shot because they



With some tubular magazines it may be possible to take the shells out of the magazine without running them through the action. Always check the chamber!

Pull out the follower and look down the tubular magazine to see if it is empty.

thought that removing the magazine took out all the ammunition and made the gun safe. Until the chamber has also been proven to be empty, the gun is not safe. Some guns have a mechanism that keeps the trigger from being pulled when the magazine is removed. But this, like other mechanical safety devices, is merely an additional precaution and is not to be relied upon alone.

Magazines are generally of two types: the box type, in which cartridges lie one on top of another; and the tubular type, in which the cartridges lie end to end. You'll find both kinds in big and small rifles as well as in shotguns. The tubular type magazine is not used on handguns, the box type being the most common. The revolver, if you want to look at it that way, has a different type of magazine. The revolver mechanism is now used only on handguns, although it was formerly used extensively on shoulder arms. In a revolver, the cylinder has several holes for cartridges bored in it, and these holes are

lined up one at a time with the barrel and the firing pin as the cylinder revolves.

The box-type magazine is usually removable from handguns and .22-caliber rifles, but may or may not be removable from other guns. In unloading a gun with a box magazine, the first step should be to remove the magazine if you can. Then open the action and carefully examine the chamber and the gun mechanism to be sure that a round has not been accidentally left in the receiver.

If the box magazine is not the removable type, open the action and examine the chamber and magazine for cartridges. If there are cartridges in the magazine, sometimes they can be removed by working them out with the fingers. In other cases, it may be necessary to close the action, at least partially, to get the round out of the magazine. Keep the muzzle pointed in a safe direction when doing this. When the last cartridge is out, double-check the magazine and chamber, and leave the action open.

The tubular magazine is a much more difficult thing to clear since it can't be removed from the gun and since, in most guns, it is very difficult to see into the magazine. In some shotguns the cartridges in the magazine can be removed without opening the action by pressing the cartridge stop with the fingers and letting the cartridges slip out one at a time. But when the magazine is empty, don't forget to open the action and clear the chamber.

In other guns, it's very difficult or impossible to clear the magazine—except by working the action back and forth. This should be done with considerable care and attention to keeping the gun pointed in a safe direction.

Many .22 rifles with tubular magazines have a long inner magazine tube containing a spring and follower. The tube must be pulled part way out of the magazine to load the magazine. If it's convenient, it's a good idea to pull this tube clear out of the magazine and look down the magazine tube to make sure it's empty.

Pushing the ejector will move the cartridges partway out of the cylinder so they can be easily reached.

Checking Actions

3c Demonstrate how to check for safety at least three of the following; explain how to check the others.

Guns are made with a number of different kinds of actions. Each type of action is usually made by two or more makers. Not only do the basic actions differ, but different makes in the same kind of action vary in details. It is not possible to list here complete instructions on all the many different types. Describing in print how to clear a gun gets rather involved and lengthy. For the details, you should get the help of your merit badge counselor or an NRA-certified instructor.

The moment you are handed a gun, clear it and leave the action open. If you don't know how to open the action and clear the gun, you have to treat it as a loaded gun. Get it to someone who can clear it! When you are being handed a gun, move the gun or move yourself so that the gun doesn't point at you in the process. And when you are handing someone a gun, after having cleared the gun, you hand it to him with the action open and the muzzle pointed in a safe direction. Hand it to him so he can easily take hold of it.

Incidentally, when we talk about "clearing" a gun, we mean that you open up the action and remove all the ammunition from the gun—both from the chamber and from the magazine. If the magazine is detachable, remove it and leave it out. It's good practice to take the ammunition out of a detachable magazine even after you have removed the magazine from the gun.

While it's a fine idea to keep the safety on whenever possible, this can occasionally be a bit of a problem. On some guns, when the safety is on, it locks the action closed so that it can't be opened. In some cases, you can't put the safety to the "on" position unless the gun is cocked. If you are familiar with the gun, it is a good idea to put the safety on before you do any other handling of the gun.

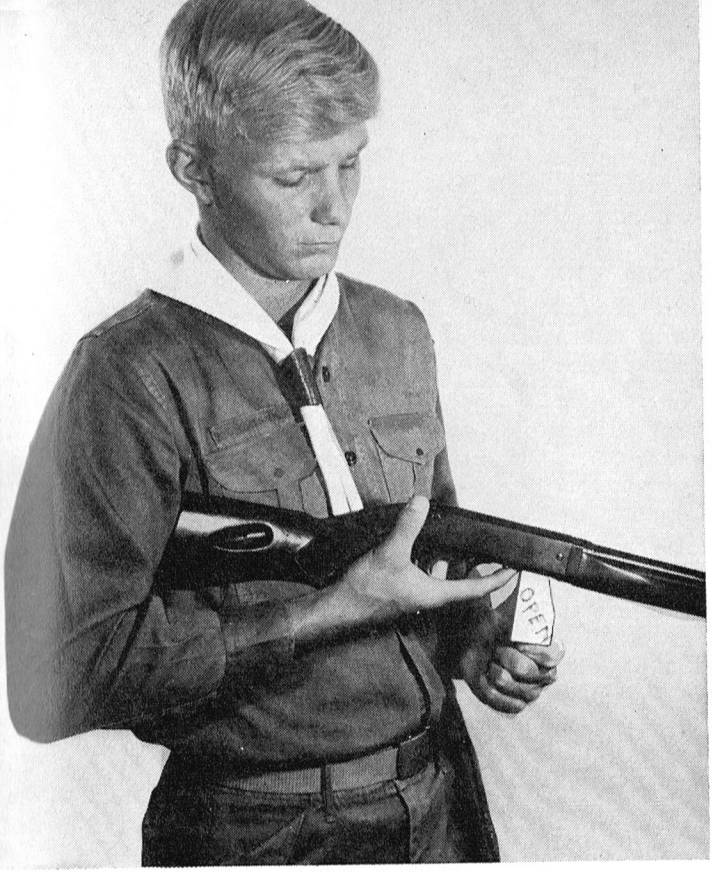
Semiautomatic Action

3c (1) Rifle or shotgun

(a) Semiautomatic action

The semiautomatic (or autoloading) action is a difficult action to make safe. In the first place, it has a magazine, with all the problems of getting the magazine out of the gun or the ammunition out of the magazine.

In the second place, the action



This .22 autoloading rifle with the tubular magazine in the stock needs a "clearing block" to hold the action open and to show that the action is open.

is continually forced home by a strong recoil spring. You have to pull the action open against this spring and hold it open while you examine the mechanism to see that it is empty. The handle that you use to open the action may not be very large, with the possibility of its slipping out of your fingers. Under some conditions (as after a misfire) the gun may fire when this happens. Pay special attention and be careful when clearing an autoloader!

On some guns, the bolt will automatically be latched open when the last round is fired or when the action is worked with an empty magazine in the gun. The autoloading shotgun with tubular magazine latches open like this. Guns with box magazines will often latch open on the last shot, but the latch is oper-

ated by the magazine, so if you remove the magazine the bolt is not latched open automatically. Sometimes there is a thumb lever you can use to latch the action open, while in other cases there is no way to hold the action open. In such cases it is a real good idea to use a clearing block. This is merely a small wooden block which fits inside the action and holds the breechblock open. The clearing block is used by the Army and in gun factories. Tack a couple of cloth streamers to the block so it is readily obvious that the action is blocked open.

Let's take a run through the procedure of making a semiautomatic action safe. The moment you pick up the gun, you apply our first safety principle and assume that it is loaded. So you immediately make sure the muzzle is pointed in a safe direction. If you know the action well and understand what goes on, you can put the safety to the "safe" position. If the gun has a detachable magazine, remove it and lay it aside. Get a firm grip on the operating handle and pull it to the rear smartly until it stops. If the gun has been loaded, this should throw the loaded cartridge out of the action. While you hold the bolt open, look inside the action and carefully examine the chamber and magazine. If they seem to be empty, work the action a couple of extra times, examine it carefully again, and put in your clearing block or latch it open. If you don't have a clearing block, you can use the blunt end of a pencil, a small pocketknife, or a clean branch—almost anything to hold the action open and to show it is open.

If you find ammunition in the gun when you first examine it, you may have to work the action back and forth until you get it all out—and then work it a couple of more times to be sure, before you examine it. While it is not a good idea to run the ammunition through the action, in and out of the chamber, it may be the only way you can figure to get the gun unloaded. *Watch the muzzle!*

It isn't a good idea, either, to flip the cartridges out on the ground, if you can avoid it. But again, the important thing is to get the gun cleared. Try to do this safely without dropping the cartridges on the ground, but watch the muzzle.

The semiautomatic action will be found in .22-caliber rifles, high-power rifles, and shotguns.

Pump Action

3c (1) Rifle or shotgun
(b) Pump action

The pump action gun is considerably easier to clear than the autoloader, since it does not have that strong bolt-closing action spring to contend with. The pump action is operated by sliding the pump handle, located un-

der the barrel, back and forth.

To avoid the possibility of the action being pulled open just as the trigger is pulled, most pump guns lock the action closed when the hammer is cocked. It is necessary to press an "action release" button or lever, which permits you to slide the action open. The action release lever or button is usually on the underside of the gun in the vicinity of the trigger guard. The safety is often in this same general area, and you may confuse this with the action release. The safety normally has two positions and will stay in either position. The action release is usually spring-loaded and you must hold it depressed while you start the action open. With the action release pressed, it may be necessary to move the slide handle forward slightly before it will release and come to the rear.

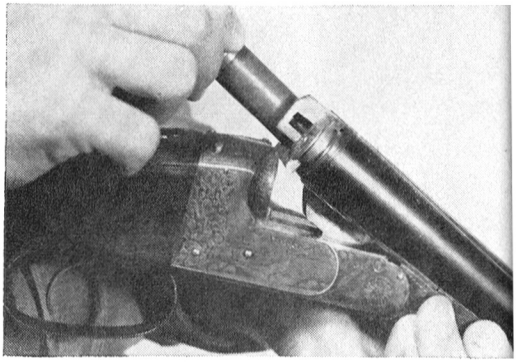
Once you get the action unlocked and open, follow the usual procedure of examining the chamber and magazine carefully. If there is ammunition in the gun, you may have to get it out by working it through the action. Watch the muzzle! Don't forget that you have to keep the action release depressed if you clear the gun in this manner.

Once the gun is cleared and you have doublechecked, leave the action open, with the slide handle pulled all the way to the rear. This tells you and your companions that the gun is open by the position of the action or by the position of the slide handle.

The pump action will be found in .22-caliber rifles, high-power rifles, and shotguns.

Break-Open Action

3c (1) Rifle or shotgun
(c) Break-open or hinge action



The break-open shotgun holds one or two shells and is easy to make safe. After the action is opened, the shells can be easily removed and stored.

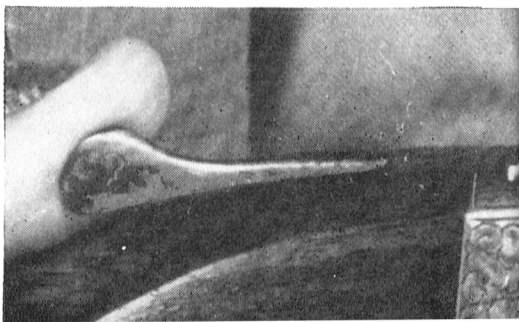
The break-open or hinge action is not as popular in this country as it was at one time. It is mostly confined to shotguns, although you may occasionally find a rifle of this type.

The hinge action is one of the easiest to clear and it is very easy to tell when the action has been cleared. This type of gun usually has two barrels, either side by side or one above the other. The single barrel gun is not uncommon, and you sometimes may run across one (usually foreign-made) with three or four barrels.

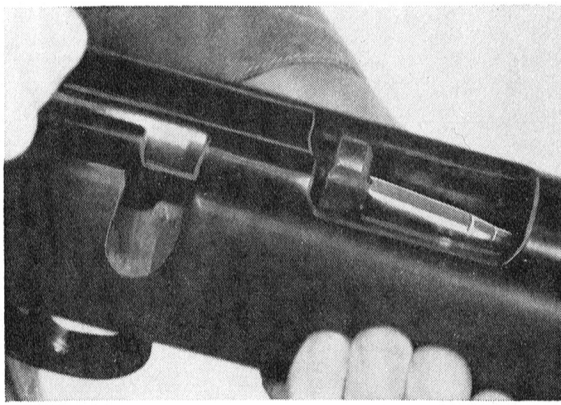
The barrels are hinged a few inches ahead of the breech, so that the muzzle swings downward. A lever on the top of the action, behind the breech, is pressed sideways to unlock the barrels from the action. With the right hand holding the grip and the right thumb pressing the top lever to the right, the left hand can force the barrels to pivot on their hinge. The barrels open enough to permit easy access to the chambers and are prevented from opening farther. With the gun fully open, it is easy to put cartridges into the chamber or take them out. The cartridges are often lifted slightly out of the chamber by the extractor.

Clearing this type of gun is very easy, as you can see. You merely break it open and lift the cartridge out of each barrel. There is no magazine to worry about. Leave the gun open.

The double-barreled shotgun is opened by pressing the top lever sideways.



This bolt action rifle has an open top receiver, letting you see into the magazine and chamber.



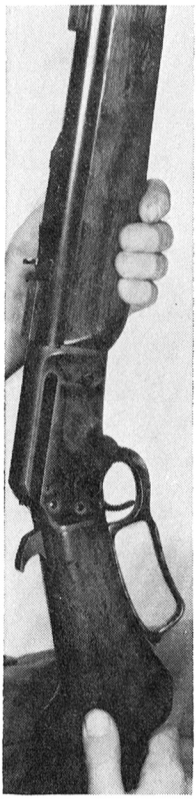
Bolt Action

3c (1) Rifle or shotgun
(d) Bolt action

The bolt action is a fairly easy type to clear as it does not have many tricks, and the action is usually exposed so that you can see in it. There is no strong spring forcing the action closed, as with the semiautomatic, but you will have to overcome the strength of the firing-pin spring in operating the action. Some guns cock the firing pin as the bolt handle is lifted, but once this is done the action is easy. If you have unusual difficulty in raising the bolt handle, check the safety. In some cases it is designed to keep the bolt handle from being accidentally raised.

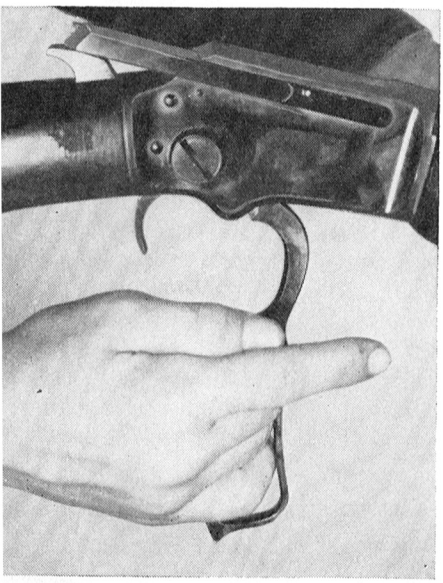
The bolt action is opened by grasping the bolt handle, lifting it, and pulling it to the rear. Examine the chamber, the action, and the end of the magazine carefully. It may be necessary to work the bolt back and forth a few times to remove any ammunition that may be in the gun. In some cases, it is not necessary to turn the bolt handle down, but merely sliding it back and forth will be enough. In other cases, it may be necessary to go all the way and turn the bolt handle down. Don't unless you have to, however. When this action has been cleared, leave the bolt open and fully drawn to the rear.

The bolt action will be found in .22-caliber rifles, high-power rifles, and shotguns.



This lever action rifle has an external or exposed hammer.

Keep your finger away from the trigger when clearing the lever action rifle.



Lever Action

3c (1) Rifle or shotgun
(e) Lever action

The lever action does not have any special tricks, except that in many cases it may be difficult to get a good look into the chamber, magazine, and action, due to the well-enclosed receiver.

The lever usually surrounds the trigger, acts as a trigger guard, and is hinged at the front end. Be careful to keep your

finger away from the trigger when you reach in to get the lever. Swing the lever down, examine the chamber, action, and magazine, and leave the lever open if there is no ammunition in the gun. If there is, you may have to operate the lever a few times to work the ammunition out of the magazine. When you are sure that it is all clear, leave the lever open all the way.

The lever action is popular in .22 rifles and high-power rifles. Although lever action shotguns have been made, they are no longer popular.

Handguns

3c (2) Handguns

The handgun is so short and so compact that it is easy to flip the muzzle in the wrong direction. If you thought it was difficult to keep a rifle or shotgun muzzle pointed in a safe direction, you're going to have to work twice as hard with the handgun!

The general principles of shooting a handgun are much like the principles of shooting a rifle. But the handgun is much more difficult to shoot well.

For these two main reasons—difficulty in safe handling and difficulty in shooting well—you are strongly urged not to do any handgun shooting until you have had considerable experience with the rifle. You should know and be able to apply the rifle shooting principles of sighting, sight setting, trigger squeeze, wobble area, position, and safe gun handling before you get involved with the difficult handgun.

Information on clearing the handgun is included here so that you may know something about the important subject of making a handgun safe. But this is not meant as an invitation to you to take up pistol shooting right away. First, learn the fundamentals with the rifle!

Semiautomatic Pistols

3c (2) (a) Semiautomatic

The semiautomatic pistol is particularly tricky to clear, since it has the disadvantages of the handgun as well as the disadvantages of the autoloader. If you do it systematically, keeping in mind our gun safety principles, you can properly clear the autoloading pistol and make it safe, despite the difficulties.

While we will describe how to clear the autoloading pistol, the process is hard to put into words, especially in view of the many kinds of pistols you may encounter. As with the semiautomatic rifle, you should get some help from a qualified instructor.

The semiautomatic pistol nearly always has a detachable box-type magazine which fits up into the handle from the bottom. The first step is to release and remove the magazine. Usually the magazine release is a button or lever at the bottom of the handle, although in some cases it may be a button higher up on the grip of the gun. Removing the magazine does not unload the gun; far from it! This is where many people get in trouble. Removing the magazine does not take the cartridge out of the chamber! This is the important thing right now.

To get the cartridge out of the chamber, hold the grip of the pistol in your right hand, grasp the rear of the slide or the bolt extension with the thumb and fingers of your left hand, and pull smartly to the rear. If there is a cartridge in the chamber, it will usually be pulled back and ejected by this action.

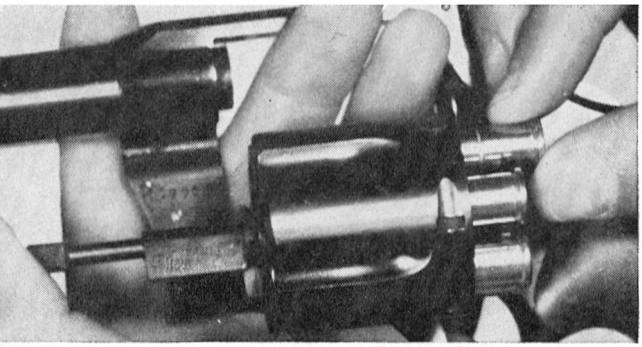
Most pistols have a lever on the receiver near the slide which can be moved to lock the action in the open position, but some pistols may not. If you have a pistol that does not have such a lever or if you're not sure where the lever is, then it is a very excellent idea to put a clearing block or a pencil in the action, as we talked about with the semiautomatic rifle. Unless you put something in the action to hold it open or find the latch, the strong mainspring will force the action closed, and you won't know whether your gun has been cleared or not. In many instances, the device that holds the pistol open is connected with the magazine so that when the gun is fired and the magazine becomes

In handling an autoloading pistol, the first thing is to remove the magazine. But this does not empty the chamber, so immediately open the action and check the chamber.

empty, the slide is held open. But this device will not normally function automatically with the magazine removed, and you will have to operate this by a finger.

As with all other guns, when you get the action open examine the chamber and the works carefully to be sure that there is not a loose ammo round left in there. Then either latch the action open or put a clearing block in it and leave it open. Take the cartridges out of the magazine but still leave it out of the gun.

The semiautomatic action is popular both in .22-caliber and in larger-caliber pistols.



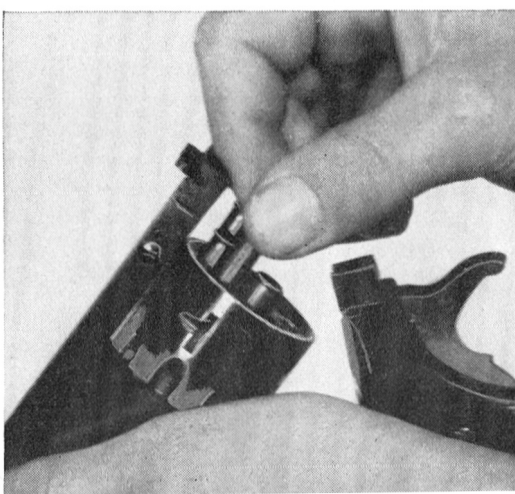
The revolver with the swing-out cylinder usually has an ejector which will force the cartridges out of the cylinder.

Revolvers

3c (2) Handguns
(b) Revolver

A revolver does not have a separate safety as is usually found on other actions. In some cases, the revolver may have a "half-cock" notch on the hammer, which holds the hammer back out of contact with any cartridges and holds it so that the hammer cannot be pulled by the trigger. While this affords some measure of safety, like all other mechanical safeties the half-cock notch

Letting the hammer down by hand on a loaded revolver is mighty tricky and takes both hands and much care.

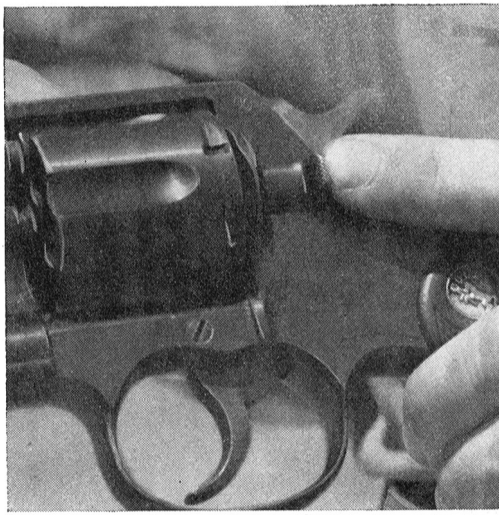


The break-open type revolver is easy to unload and clear.

is not to be trusted. Follow the rule of keeping the gun pointed where it will not do any harm.

There are three types of revolvers with which you should be familiar, since they all take different methods for clearing. One is the break-open or hinge type, which will remind you very much of the break-open-type shotgun. The barrel and cylinder are hinged on the front part of the frame and held closed by a latch on the top rear part of the barrel. When the latch is lifted, the cylinder swings up on the hinge, making the cylinder readily visible and letting you get at the ammunition that may be in the cylinder. Often the ejector may lift any cartridges slightly out of the cylinder so that they may be more easily grasped by your fingers. Be sure that the cartridges are removed from all chambers of the cylinder, and leave the gun open or broken.

Another type of revolver is the swing-out type in which only the cylinder is movable. The cylinder can be swung out sideways, making the chambers readily visible and accessible. There is a latch on the side of the frame which holds the cylinder in place and which must be pressed to swing it out. The latch itself is usually locked in place when the hammer is cocked. Therefore, if the hammer should be cocked when you pick up the revolver, it is necessary to let the hammer down before the cylinder can be swung out and the ammunition removed. Watch out here – letting that hammer down can be a real tricky business. Be sure you keep the muzzle pointed in a safe direction! Grasp the gun firmly with your right hand. Put your left hand over the gun so that your thumb is across the hammer and your fingers are gripping around the trigger guard, well away from the muzzle. As you hold the hammer tightly with your left thumb, pull the trigger with your right forefinger and slowly let the hammer start to move down. The object is to let the hammer down so slowly that, if the firing pin should touch the



The latch on the side of this revolver releases the cylinder so that it may be swung out for loading and unloading.

primer, it won't hit it hard enough to make it fire. As soon as the hammer starts to move, release the trigger. In some guns this puts an additional safety feature in effect, which will help to keep the firing pin away from the primer. Get your instructor to teach you how to let the revolver hammer down safely!

With the hammer down, the latch on the left side of the frame should slide backward or forward, releasing the cylinder. Swing the cylinder out as far as it will go. Usually at the front end of the cylinder you will find an ejector rod. When you push this to the rear, it lifts the cartridges out of the cylinder, where you can easily get hold of them. When you have all the cartridges out of the cylinder, let it swing out. It will be apparent that the gun is empty and open.

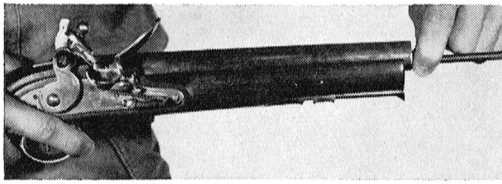
Like the swing-out type, the third kind of revolver also has a solid frame without a hinge. In this case, however, the cylinder is fixed on its axis and cannot be swung out. The chambers of the cylinder are loaded one at a time through a cutout on the side of the frame. This is often covered with a hinged "loading gate," which is swung out of the way for loading or unloading. This type of gun usually has a half-cock notch on the hammer. The hammer must be in the half-cock position so that the cylinder can be rotated to load or unload the chambers.

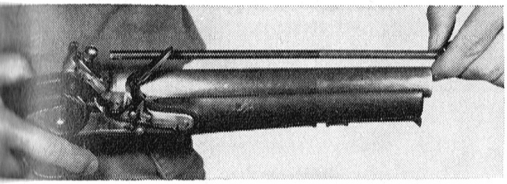
If the hammer is down, point the muzzle in a safe direction and slowly pull the hammer back. About halfway back or a little before, you will feel or hear a click. Slowly let the hammer down a slight bit and it should be caught in the half-cock notch. If the revolver is cocked, you must go through that careful hammer-lowering procedure. Be sure to release the trigger as soon as you start to let the hammer down, or it will not catch on the half-cock notch.

With the hammer in the correct position, you are ready to take the cartridges out of the cylinder. Open the loading gate. Laying alongside the barrel should be a rod which you can push to the rear to force the cartridge out of the chamber at the loading position. Rotate the cylinder to the next position and poke that cartridge out. Continue until you have safely removed all the cartridges.

Now carefully check each chamber again!

It's very difficult to tell by looking at it whether this type of gun is clear or not. Consequently, after you have cleared the gun, leave the hammer on half cock—and treat the gun as if it were loaded! These three types of revolvers may be found in 22.-caliber or larger pistols. The hinge-type action is sometimes used with a single-shot .22 pistol.





Muzzle-Loader

3c (3) Muzzle-loader of any type

The muzzle-loader was the original type of gun. It was largely replaced by the breech-loader many years ago, but now there is a growing interest in shooting muzzle-loading guns and you can buy muzzle-loading guns of today's manufacture. There are many old muzzle-loading guns in collections, hanging on the wall, hidden away in the attic, etc. Since there are so many around, you should know something about the peculiar problems of safely clearing a muzzle-loader.

The muzzle-loader does not use the complete metallic cartridge with which you are familiar. Instead, the powder charge, the bullet, and the priming are loaded separately. For conve-

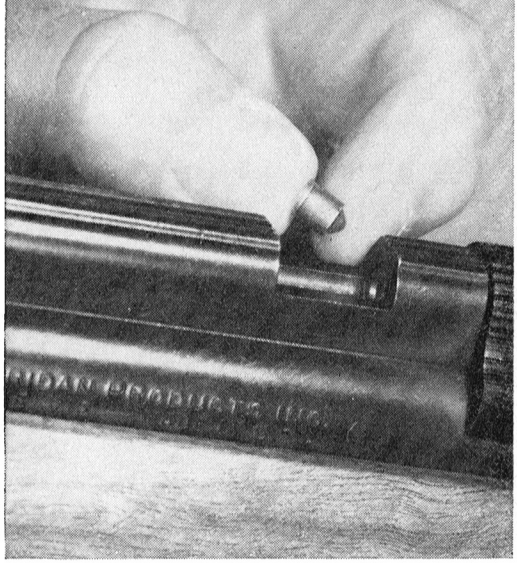
nience in carrying, the components are sometimes packed together in a paper cartridge, but they are loaded separately. As you might guess, the powder is dumped in the barrel from the muzzle. The bullet is put in the barrel from the muzzle, with or without wadding. Once these elements are rammed in place, there is no way to tell by looking at it whether the gun is loaded or not.

Some muzzle-loaders are primed by a percussion cap. This is a copper cap about the size and shape of a pencil eraser, which slips down over a small nipple extending out of the side of the barrel. The cap contains a priming compound which fires when it is crushed against the nipple by the hammer. The flame from the primer squirts into the chamber and sets fire to the powder. If you have a percussion muzzle-loader, the first step is to point it in a safe direction and put the hammer on the half-cock notch. You can then examine the face of the hammer and the nipple for a cap. If you find one, carefully remove it. A cap is powerful and sensitive to heat or a blow.

If your gun is not of the percussion type, it probably will be a flintlock and it will have a hammer which strikes flint against steel. The shower of sparks from the flint and steel is directed into a small pan on the side of the rifle. The pan holds a small quantity of black powder for priming, which carries the fire to the main charge through a flash hole in the chamber. With this type of gun, put the hammer on the half-cock notch and raise the cover over the pan. Blow or wipe out any priming powder on it.

Even though you have taken care of the priming problem, you still haven't determined if the gun is loaded or not. Because it takes a little knowledge to check this, many muzzle-loaders have remained loaded for years without anyone realizing it. To find out if the gun is loaded, carefully and gently put a ramrod down the barrel until it stops. Mark the position of the muzzle on the rod. Pull the rod out and lay it alongside the barrel, matching up the position of the mark with the muzzle. If the far end of the rod goes down to, or slightly beyond, the flash hole, the gun isn't loaded. But if the end should be much above the flash hole, watch out—it may be loaded! Getting the charge out of a muzzle-loader takes special tools and special experience, and you should get a gunsmith or person familiar with muzzle-loaders to do it.

Just another word of caution—black powder. Black powder is used in muzzle-loaders and is *very* sensitive to flame or spark —far more sensitive than modern smokeless powder. Black powder can be dissolved by water—remember the saying, "Keep your powder dry"?



Air guns shoot a round BB or a specially shaped pellet, as shown here. It may be next to impossible to tell if an air gun is loaded—so treat them all with care.

Gas and Air Guns

3c (4) Gas, pneumatic, or air gun

There are so many types of these guns, with various methods of loading and various methods of providing the power, that it is not possible for us to talk about them all. There are a few important points to remember:

These guns can be dangerous if carelessly handled. Treat them just as you would any powder-operated gun.

It may be very difficult to tell if the gun is loaded and ready to fire, so be careful.

It may be nearly impossible to unload one of these guns, except by shooting it.

All this means that if you are going to use a gun of this type, you must take extra care to learn how to handle and clear it.

Gun Safety in the Field

3d Demonstrate in the field: (1) Safe carrying of a gun when alone or with other hunters.

There are many ways of carrying a gun in the field. The method you use at any moment will depend on where your companions are located and on the kind of ground you are walking on, the sort of terrain you are going through.

Safe handling of a gun in the field is based on a few sensible rules. The first is that basic rule for all safe gun handling—keep the muzzle pointed away from people (and that includes you)! Carry and protect the gun so that if brush or a twig should catch on the trigger or hammer and fire the gun, no one will be in the line of fire.

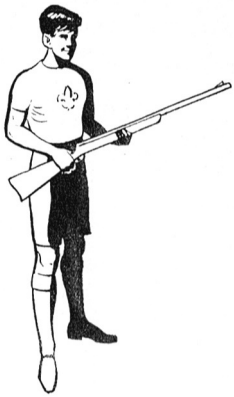
You have to amplify that rule a bit when in the field. You never know when you're going to catch your toe under a tough vine or when you are going to slip. You may take an unexpected spill any time. When you do, your gun is likely to hit the ground with a crash and fire. So the second rule is that you carry the gun so that the muzzle will be pointed in a safe direction if you fall.

And, of course, you will follow the basic rule of all shooting that you don't put your finger on the trigger until you are all ready to shoot. Keep your trigger finger out of the trigger guard until the last moment before firing.

The safety—sure, you'll keep the safety on until you are just ready to shoot. If you don't shoot, you put the safety back on. But as you learned earlier, the safety is merely an additional precaution to other safety measures you take. Don't rely on the safety for complete protection.

You have to keep track of the other hunters in your party, both for safe carrying of your gun and for safe shooting when you find game. If there is any doubt where the others are—*don't shoot.*

There are many ways of carrying the gun, and the one you use at any moment will depend on the extent of the brush, trees, etc., and on where the others of your party are located. You can, for example, carry the gun at your side, held by one hand at the balance, with the muzzle pointing



forward. This would be dangerous if there were someone ahead of you. You can cradle the gun in your left arm, but not if anyone is on your left side. If you carry it on your shoulder, muzzle pointing to the rear, watch out that there is no one behind you, or else carry it with the trigger guard up. There are so many possibilities in the field that you have to apply the general rules and a large amount of common sense.

If you are carefully working your way along a steep, slippery hillside or fighting your way through head-high brush, you couldn't shoot even if you did scare out any game. So why take a chance with a loaded gun under these bad conditions? Open the action in such a situation and you will be much less likely to get in trouble. That's another angle of this general rule of not loading the gun until you are

ready to shoot and of unloading it when you are finished shooting or are not able to shoot.

In all this gun handling in the field, watch out for getting mud, snow, etc., in the barrel of the gun. Keep the muzzle off the ground and out of snowbanks. If you fall, clear the gun and examine the barrel. If there is any obstruction in the bore, clean it but don't shoot it!

Safe carrying of a gun includes knowing what to do with it when you are not actually handling it. One of the general rules is that you *never let a closed and loaded gun leave your hands.* If you are going to lean your gun against the car, lean it against a tree, lay it on the ground, or hand it to a companion momentarily; open the action at least. Depending on the circumstances, you probably will want to clear it, but at least open the action.

Loading and Unloading

3d Demonstrate in the field: (2) Proper relationship of hunters when loading and unloading guns.

There are a couple of precautions you must take when loading or unloading a gun in the field or at any time. You may get so interested and intent on getting the ammunition in or out of the gun that you don't pay enough attention to the muzzle and let it drift in a dangerous direction. There is also some increased chance of the gun going off accidentally when you are working ammunition through the action. If you pay attention to these points and our basic gun-handling principles, you shouldn't have any trouble.

On the target range you don't load until you are in position and all ready to go. In the field you don't load your gun until you have moved out where there is a chance of finding game. Likewise, you unload your gun as soon as there is no chance of finding game. You clear your gun when you come up to talk to another hunter or a farmer.

You load and unload your gun as far away from other people as you reasonably can. In any event, you must be careful to keep the muzzle pointed in a safe direction. When you're in the field, it is generally best to keep the muzzle pointing up in the air. Pointing it at the ground is not quite as safe, since a shot fired at the ground may glance off in another direction.

Once you have cleared your gun, you leave the action open as a constant reminder that this is a safe gun. As an expert on the subject of safe gun handling, you should be sure that your companions in the field also follow the proper, safe procedures. If they don't know, you should teach them how.

Guns and Cars

3d Demonstrate in the field: (3) Safe handling of a gun when taking it out of and putting it in a car.

To begin with, you NEVER, NEVER have a loaded gun in the car. Not only is it very dangerous, but it is against the law in most localities!

Even though you never put a loaded gun in the car or load a gun while in the car, you follow the basic safety rule of treating a gun in the car as loaded if the action is closed. If you find a gun with the action closed, you position yourself so that the muzzle isn't pointed toward you as you take the gun out of the car—and don't let it point at your companions. Immediately, when you get it out of the car, you go through the usual clearing procedure, ending with the chamber empty, the magazine empty, and the action open. If you find a gun laying on the car seat, don't grab it by the muzzle and drag it toward you. Keep the muzzle pointed away.

Check your local laws for the rules about carrying guns in a car. Your State hunting laws will often be specific on this subject. Some merely require that the gun be unloaded, while others may demand that the gun be unloaded and either taken apart or put in a case. Even if the laws don't require it, it's a good idea to carry the gun in a case when you have it in a car. The case will protect it and keep it from being scratched, dented, or sights being damaged.

Crossing a Fence

3d Demonstrate in the field: (4) Safe gun handling when crossing a fence.

Unload your gun and slide it under the fence before you try to cross.

There is only one thing to be said about crossing a fence with a gun – DON'T!

If you are hunting by yourself and come to a fence that you can't easily step over, be safe. Clear the gun, leave the action open, and slip the gun under the fence, muzzle pointing away from you. Move down the fence a few feet away from the gun and go over, under, or through the fence. Then go back and pick up your gun. If you planned it right, the gun muzzle will be pointing away from you all the time.

There is one bad thing about this method. If the ground is muddy or covered with snow, you may get mud or snow in the action or barrel. This is something to watch out for, since they may jam the gun or make it unsafe. If conditions are bad, you may have to lean the cleared and open gun against a bush, tree, or fencepost. Be sure the gun is supported solidly so you won't accidentally knock it over as you cross the fence.

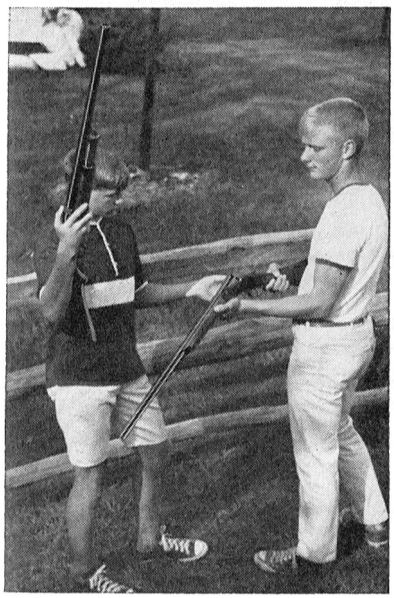
You may be tempted to clear the action and take the gun with you as you negotiate the fence. Although it may not be unsafe if you have cleared your gun, this is still a very poor idea.

Carrying the gun with you increases your difficulty in crossing the fence and more importantly, you are very liable to bang or drag the gun against the fence, marring the finish on the stock or metal parts. It's easy to get tangled up in a fence and take a spill, and you may end up breaking the stock or otherwise seriously damaging your gun.

If you are hunting with someone, you can both use this procedure for getting across the fence or you can join forces. Your companion can hold both guns while you cross and then you reach over the fence and get both guns so that he can be free to cross. If you do, remember that you never let a loaded gun leave your hands. Clear your gun and leave the action open before you hand it to your companion.

But whenever you are tempted to cross a fence with even an unloaded gun in your hand, think again and don't do it!

If you are hunting with a buddy, you can hand him your open gun while you cross the fence—then you hold both guns while he crosses.



Safe Zone of Fire

3e Explain what is meant by "safe-zone of fire."

A bullet is a mindless bit of metal and will hit anything that gets in its way – good or bad. Once you pull the trigger, you're responsible for that bullet all the way. You are not finished with it until it finally comes to rest. So it is up to you to be sure that the bullet accurately hits only the target you want or that it goes in a safe direction.

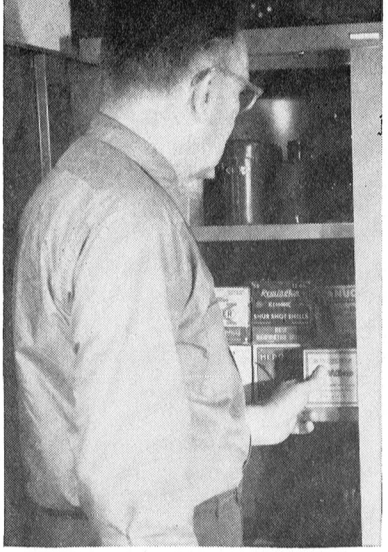
You'd better know what lies between you and your target and what lies beyond your target. The bullet fired from a .22 rimfire rifle has a maximum range of about a mile—and even at that distance is capable of doing damage. A high-power deer rifle can be dangerous at a distance of a couple of miles. Air guns and gas guns have a much shorter range. The shotgun with usual shot loads has a maximum range of

about 200 to 300 yards. Buckshot or the single slug will have a greater range.

A bullet or shot charge that hits a glancing blow on a rock or a piece of concrete or a water surface is likely to skip off and keep right on going. Or it may even glance off and go in a new direction. While it is important to know what you are shooting at, it is also important to know what you are shooting against!

A safe zone of fire is one where the bullet or shot charge is safely controlled or contained, as on a rifle range or shotgun field. A safe zone of fire can also be an area where there is no change of anything being endangered clear out to the extreme range of the bullet or shot charge.

Such a safe zone can change as you move around or as other people move in the area. When you are hunting with other people, it is necessary that you know where they are all the time. It is mighty easy to lose track of your companions momentarily in the woods and brush. If you don't know; don't shoot!



Ammunition should be stored away from the guns, and preferably in a locked cabinet.

Safe Storage

3f Explain the principles of safe storage of guns and ammunition at home.

There are two things to consider on this subject — storage of the gun and ammunition so they will not be damaged, and storage of the gun and ammunition so no one else can get hold of them and cause an accident!

Ammunition is best stored in a cool, dry place; but, if you have only a small quantity and don't expect to store it for years, almost anywhere in the house should be all right except an area near the furnace, furnace ducts, or a stove. You want to keep ammunition stored away from these for safety's sake.

The gun itself should also be stored in a cool, dry place if possible. It is especially important

that the place be dry, so that rust won't form on the inside and outside of the metal parts.

These precautions will ensure that the rifle and ammunition are stored so they won't be damaged. It is more important to store them so that other people can't get at them to cause accidents. This is especially necessary if there are children around your house.

Since ammunition can be dangerous if it is played with and since a gun doesn't become dangerous until it has ammunition in it, the main thing is to store the ammunition in a locked cabinet, away from the gun.

The gun itself should be stored in a locked cabinet, if possible. And, of course, you wouldn't think of storing it with any ammunition in it! But every time you pick it up—open the action and check to be sure it is unloaded. Keep that action open until you are ready to put the gun away or put it in its case.

The other people who live in your house should be taught the essentials of safe gun handling, so that, if the necessity should arise, they can clear a gun and know how to handle it safely. Young brothers are especially interested in such things. As soon as they are old enough, they should be taught safe gun handling but should be strictly forbidden to touch your gun unless you are present.

It's a good idea to keep pistols and revolvers in a locked cabinet, especially if there are younger brothers and sisters around.

Showing a Rifle

3g Explain what you would do if a friend visiting your home asked to see your target rifle.

I would ask him to wait while I got the rifle. I would get the rifle from the cabinet and carefully open the action, examine the chamber and magazine. I would explain to him the interesting features of the rifle, and I would explain to him the basic safety features of keeping the action open and keeping the muzzle pointing in a safe direction. If he wanted to handle the rifle, I would then give it to him, while I watched carefully to be sure he handled it safely.

Care of Guns

3h Explain the care and maintenance necessary to keep a firearm in good and safe working condition.

Part of the *pleasure* of handling a gun is the proper maintenance of it. Part of the *responsibility* of owning a gun is its proper maintenance and care.

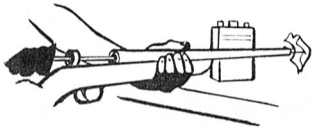
Maintenance and care are necessary to keep a gun in a reliable, safe, operating condition. A gun that is rusty and dirty won't look good, may not operate properly, and may actually be unsafe.

A gun is a beautiful thing — when it leaves the factory. It has many metal parts that have been very carefully machined, inspected, tested, polished, and given some sort of attractive finish. The wooden parts have been made from a piece of carefully selected wood, turned precisely to shape, carefully sanded and smoothed, and given a handsome protective finish. A new gun is a delight to see and a delight to handle. It not only looks good but it feels good.

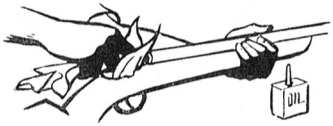
It is up to you how this gun will look and feel after you have used it awhile. It only takes a little bit of ordinary care to keep from having the gun all marred, dented, and scratched. Carry the gun in a case when possible. Don't throw it down carelessly or let a bunch of junk get piled on it in the car trunk. Just a little care will work wonders and will mark you as a knowledgeable, expert gun handler.

Most of the parts of a gun are made of steel, and many of them are blued. In any event, whether blued or not, all the metal parts need a light protective coat of oil to prevent rust from atmospheric conditions. When you are on the range or carrying the gun in the field, you wipe off the oil so it won't gather dust and dirt. But you apply the protective coat when you get home. It's a good idea to have a very lightly oiled wiping rag stored in a metal container near the gun so that you can wipe off the fingermarks after the gun has been handled. The salty perspiration from your fingers and hands is very likely to cause rust.

The inside of the barrel needs only a little more attention. After you are done shooting, wipe out



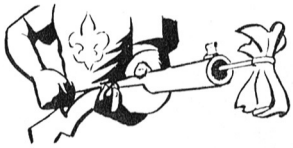
Clean barrel and metal parts with a good commercial solvent.



All metal parts should get light coat of oil.

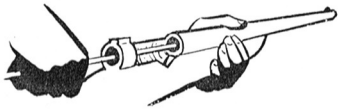
Clean bore until dry patch comes through as clean as possible.

Store in horizontal position.

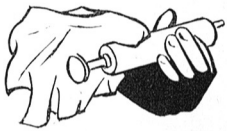


Run oily patch through barrel.

After storage, run clean patch through bore before firing.



Bore should be cleaned through breech end where possible.



Remove all excess grease and oil.

the bore with a dry patch or two and follow with a patch lightly soaked in preservative oil. Before you go out to shoot next time, wipe the barrel out with a dry patch to clean it.

The smoothbore shotgun tends to pick up a thin coating of lead from the lead pellets as they pass down the barrel. This usually is found just ahead of the chamber in the forcing cone and near the muzzle in the choke. If you see dark, dull, irregular streaks in the bore, this could be lead. It is easily removed by putting a wad of fine steel wool on the end of the cleaning rod and scrubbing the bore a few strokes until the leading is gone. If your .22 rifle or pellet gun begins to shoot poorly, it might have some lead in it. A brass bristle brush will usually clean out the bore in good shape. When you are finished, don't forget that light coat of preservative oil.

Like any other piece of machinery, the gun mechanism should occasionally be cleaned and lubricated. A gun that is used in the field will get dusty, and some of this dust will get into the working parts. During shooting, bits of unburned powder or carbon may work their way into the action. Previous lubrication will dry up and get gummy or sticky. If a gun is used much, the mechanism should be cleaned rather often. But if it is not used much, a cleaning once a year should be enough.

Before you start to work on your gun or clean it, be sure that it is unloaded and that there is no ammunition in the area.

Be very careful to follow the maker's directions in taking the gun apart and putting it back together again. It is not necessary to take it down to the last pin and part, but only far enough so that you can clean it properly. The less you take apart; the better off you are.

The action should be *lightly* oiled. A little lubricant is enough, and twice as much is not twice as good. Excess oil will run out of the action onto your clothes or into the stock and will generally make a mess of things.

Don't ever try to replace or repair a broken or damaged part, unless it is some of the woodwork. You may think a nail is a fine replacement for a missing firing pin – but it can be very dangerous. If you find a part missing or damaged, take the gun to a good gunsmith.

Aside from the barrel and action, the rest of the gun doesn't take much care. If you have a leather sling, a little bit of neat's-foot oil or other leather preservative applied from time to time will keep it soft and flexible. A little linseed oil or other stock finish will help hide any scratched or worn places on the stock.

You might think that storing the gun in a nice sheepskin case

would keep it from rusting. Who ever saw a rusty sheep? But a case made of sheepskin, leather, or cloth may gather moisture and cause the gun to rust. And worse, you won't be able to see what is happening. A gun is best stored in the open or in a clear plastic case.

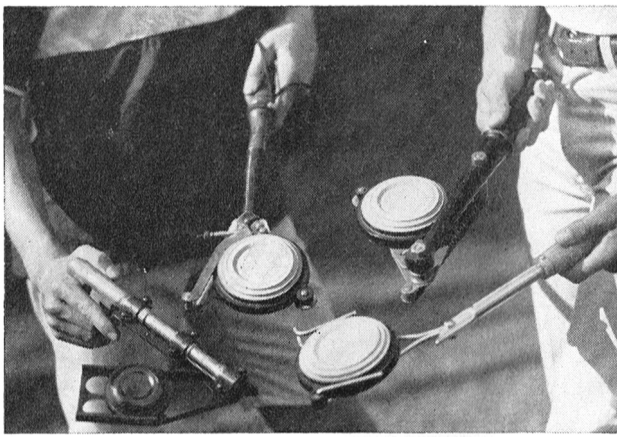
And of course you never leave a cleaning patch or anything else in the barrel! It is unnecessary and dangerous. You may forget about it and fire a shot with the obstruction in the barrel, probably blowing up the gun. All that is needed is that light coat of oil. Wipe it out completely before you start shooting.

We have mentioned it before, but this is a good time to mention it again – keep the barrel clear! In the field it is easy to get mud, snow, and dirt in the barrel if you aren't careful. If there is any question, clear the gun and look through the barrel. If it is not clear for the whole length, clean out the obstruction. If you are not able to clean it out, take the gun to a gunsmith for service. *Don't try to shoot an obstruction out.*

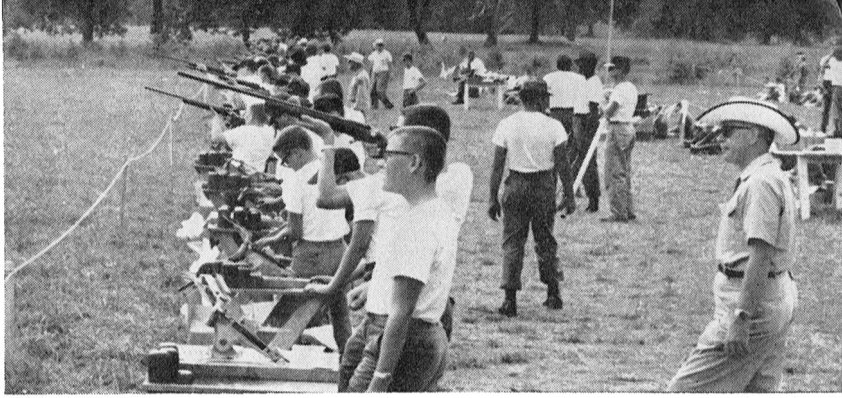
Any time your gun begins to misfire, fails to feed properly, fails to eject, or seems hard to operate–that is the time to stop and see what is wrong. You may have a broken part or dirt or a twig in the action. A poorly functioning gun is dangerous. Be sure your gun works properly!

Shooting Skills

You can learn a lot about rifle shooting at camp, jamborees, and any other indoor or outdoor place that has a shooting range that comes up to NRA standards. Qualified instructors are on hand to correct the mistakes and to make sure all safety regulations are observed. At the left is one of the giant-sized ranges at one of our national jamborees.



Shooting at clay pigeons is great fun whether you use the .22-caliber Mo-Skeet-O type gun or one of the many sizes of shotguns. With enough practice, you can make a creditable score and feel that you are ready for a little competition or the thrill of a hunting experience.



FETY

SHOOTING HELPS

Additional assistance in problems concerning hunting, shooting, range construction, organizing clubs, etc., is readily available for the asking.

The National Rifle Association promotes rifle, pistol, and shotgun shooting. It is the governing body for most rifle and pistol shooting in the United States. It conducts instructions, competitions, and qualification programs. The NRA will provide assistance to junior clubs, senior clubs, or individuals. It publishes a monthly magazine, *The American Rifleman,* on guns and shooting, as well as a number of booklets on various aspects of shooting, training, building ranges, organizing clubs, etc. For information write National Rifle Association, 1600 Rhode Island Avenue, Washington, D.C. 20036.

The Director of Civilian Marksmanship is an official of the U.S. Army who provides assistance to organized junior and senior clubs. He can provide limited quantities of rifles, ammunition, targets, and other help to clubs that meet the requirements. Write Director of Civilian Marksmanship, Department of the Army, Washington, D.C. 20315.

The Amateur Trapshooting Association is the governing body for most trapshooting in the United States. The ATA provides rules for trapshooting, building a range, forming a club, etc.

The National Skeet Shooting Association is the governing body for most skeet shooting in the United States. The NSSA can provide rules for skeet shooting, building a range, forming a club, etc. Write National Skeet Shooting Association, 2608 Inwood Road, Dallas, Tex. 75235.

The National Shooting Sports Foundation, 1075 Post Road, Riverside, Conn. 06878, and the various individual arms and ammunition companies can provide helpful advice on most aspects of shooting and hunting.

ACKNOWLEDGMENTS

Col. Edward B. Crossman, author of this merit badge pamphlet, is nationally recognized as a firearms authority and ballistics expert. His by-line, "Col. Jim Crossman," has gained repute in *The American Rifleman, Sports Afield,* and other shooting and ordinance magazines. His own experience as a camp staff member, Life Scout, and adult leader has fired the enthusiasm shown on these pages for the shooting game.

The Boy Scouts of America is also grateful to the National Rifle Association for its assistance in preparing this pamphlet. Valuable guidance has been received from its editorial services and permissions granted to use or copy illustrative material. Staff members Stanley A. Mate, director of the Training Division, and Frank L. Wyman, director of the Program Division have helped to shape the new requirements and the new pamphlet.

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YOU AND YOUR COUNSELOR

Your merit badge counselor is as important to you as a good coach is to an athlete. He is a real "pro" in his field; be sure to soak up all the knowledge and experience he can offer. This may be your only chance to learn from an expert in this subject. Make it count.